

## EM Pollution and Electromagnetic Stress

Plants, trees, fish, birds, microbes, insects and mammals have all developed over millions of years to thrive in their environment. They are all dependent upon a stable and pollution free environment to thrive. They may be exquisitely sensitive to environmental pressures and pollution.

Rachel Carson's *Silent Spring* was the early book to raise the alarm about pesticides and pollution, when the collapse of predator bird populations pointed to poisoning as the problem. At one point rivers were used as both sewers and places to dump industry's toxic waste – in the 1960's many major UK rivers near industry were full of foam from detergent residues. They have since been cleaned up.

Human bodies are now exposed to, and contain, a plethora of petrochemical and toxic residues, in minute quantities – the interaction between all of these contributes to ill health. Some act as oestrogen mimics, some poison other biological functions (after all, pesticides are designed to kill some creatures – so it would be folly to imagine that human bodies are somehow magically immune to these poisons, and completely unaffected)

Over the last hundred years, a new source of pollution has arisen – especially in the last ten – and continues, at an accelerating rate. Radio hams from the 50's and 60's knew to keep away from transmitters – and it was previously discovered pre-war that radar had harmful effects on bodies (killing or making ill soldiers and technicians).

Every electrical device has the potential to produce electric and magnetic fields – both types when current is flowing, just electric when current is not, but when the device is connected to the mains supply. In addition, any metal object can develop an induced current from other fields, and radiate its own field. Devices such as mobile phones produce electromagnetic fields and emit energy in the form of electromagnetic radiation.

The background static magnetic field from the earth, to which all of life adapted, is approx 40 microTeslas ( $\mu\text{T}$ ). Adverse biological effects from slowly varying magnetic fields associated with geomagnetic storms have been widely reported at 0.1  $\mu\text{T}$  and from magnetic fields associated with the electricity supply at 0.3  $\mu\text{T}$ , whilst some birds have been discovered to navigate using natural field fluctuations below 0.05  $\mu\text{T}$ . Countries vary in the safety levels they permit – the UK is one of the highest at 100  $\mu\text{T}$  (scary) and is about to be increased to 200  $\mu\text{T}$  in response to industry requests.

The dangers of transmitters have been mentioned above. Transmitters are now being rolled out widely – starting with Communication and Mobile phone masts, and in the home including cordless phone base stations and handsets, wifi transmitters for internet and other uses, mobile phones, home alarm sensors, baby alarms, and Smart meters. Unfortunately the effects of these transmissions on bodies are two-fold

- Power effects
- Signal effects

The power effects are reasonably understood, and so some research has been done. This has focuses mainly on heating effects and immediate damage to tissue, and though significant, has tended to be dismissed. (In the same way, the known correlation between power lines and childhood leukaemia clusters has also been dismissed, not because of the tragic consequences for the individual, but because of the rarity of occurrence).

Unfortunately, the signal effect have not been researched widely – but early results are concerning. Jim Oschmann, (*Energy Medicine*, Churchill Livingstone, 2000) coined the phrase the "Living Matrix" to describe the human body – a sort of crystalline structure composed of cells, water, the fascia and of course all the organs like heart, nerves, lungs, etc that we already know about. He describes how all cells are interconnected, and how communication in the body appears to happen not just via nerves and neurotransmitters, but also at an electronic level, like a computer microchip. This is concerning if we are submitting

our bodies to electromagnetic fields and signals – because it can alter the signalling. (Some people find that a mobile or cordless phone transmitting next to their heads gives not just a headache, but actually causes slurred speech and slowed thought processes – “jamming”). There’s another area of major concern to healthy body function, and to cell division, related to the signal effect. Back in the 1940’s it was described how electromagnetic fields appeared to cause breakages in genes. It was thought that this was a power effect, and so as long as power exposure is kept low, then these adverse effects can be avoided

Let’s just take a diversion to remind ourselves about some quantum physics – that of electron spin. Physicists tell us that electron pairs are continuously splitting into free radical pairs and recombining, like jigsaw pieces that separate then go back together perfectly. As we know, free radicals in the body go off on a trail of destruction unless neutralised. Fortunately, this splitting and recombining means that no new free radicals are let free to cause damage. Unfortunately, when subject to a magnetic field, the electrons alter their spin slightly – enough to stop the jigsaw pieces being able to rejoin at all. The now unleashed free radical goes off to cause damage.

It’s entirely probable that DNA damage such as in childhood leukaemia occurs in this way – a weak signal effect causing the jigsaw to fail to join properly (not a strong power effect bursting DNA apart). The big problem that springs from this is that all sorts of subclinical damage may be happening to the body’s immune system and other functioning at much weaker strengths of fields than the expert committees have told us are safe. Yet some countries are more aware. In Austria, for instance, power ratings of cordless phones are much lower, and the base stations do not transmit unless the phone is being used. In UK the vast majority of telephone base stations transmit 24 hours a day – and when it comes to the internet, your service provider may well be using your Home Hub to provide a wifi hotspot not just for your house but for a wider area – obviously by using a powerful transmitter.

Unfortunately, we live with electrics all the time, and industry is rolling out ever more technology that transmits within our living space, with little regard to the health effects. Electrosensitivity is now a described phenomenon, though not taught at medical school – so very few doctors will know about it. It manifests with many different symptoms, including headaches, fatigue, tinglings, weakness, aches and pains, inability to throw off minor illness easily, and many others. These are very common symptoms, and often ignored because they may not be serious, or because finding out the answer is not possible. So you may end up taking medication to dull the symptoms, after investigations using blood tests have shown nothing wrong.

The Roman Empire is said to have ended partly due to improved technology – the water pipes were more efficient – but were made from lead. So people died of lead poisoning. It may be that we are polluting ourselves into ill health and poor life quality, let alone more serious concerns, not just with artificial chemicals, but also with electromagnetic fields which ‘smog’ the system into ill-health

Gro Harlem Brundtland, former Prime Minister of Norway, Director-General of the World Health Organisation and a medical doctor, herself electrosensitive, has stated “I am convinced we need to take this seriously” The sooner we start a concerted Public Health, University Research and Primary Care Research programme, the more people can be helped <http://assembly.coe.int/Main.asp?link=/Documents/WorkingDocs/Doc11/EDOC12608.htm> shows how concerned the Council of Europe are (May 2011). Also in May, the influential WHO International Agency for Research on Cancer moved its stance from transmitting radiations from being not harmful, to being a Class 2b possible carcinogen – a major change in position

The Powerwatch Handbook by Alasdair and Jean Philips is a valuable introduction to the subject as are the websites [www.powerwatch.org.uk](http://www.powerwatch.org.uk), [www.electric-fields.bris.ac.uk](http://www.electric-fields.bris.ac.uk) and [www.es-uk.info](http://www.es-uk.info)

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