

## Electrosensitivity Briefing v6 Aug 2020

Modern Biology tells us that all life is electromagnetic, and sensitive. Cells communicate and operate not just with chemicals, but also with electricity and 'electronics'. 'Gates' in cell membranes for ions such as calcium, magnesium, sodium, potassium and chloride result in communication that is amplified millions of times for a tiny stimulus, just like transistors. This applies to humans, plants, insects, animals and all life forms, some of which navigate on minute magnetic fields. This is why our eyes can respond to a single photon in darkness (a tiny energy) and our ears, adjusted to silence, to a billionth of a watt of sound. The heart is a large electromagnetic organ, with a measurable field over a metre from the body, whilst the brain is well-known to produce EM signals.

Electricity has transformed society, first as a power source, and latterly through communication, first wired, now wireless. Electric current produces both magnetic and electric fields, whilst wireless relies upon radiofrequency (microwave) transmissions. Current UK safety limits derive from ICNIRP, (International Commission on Non-Ionising Radiation Protection) advice, which gives short term (6 or 30 minute) thermal limits only, on the basis that heating to less than one degree C, averaged over the whole body, is harmless. ICNIRP's advice unfortunately ignores all modern biology telling us that life is electromagnetic – because of course EM fields will interact with each other. Maybe ICNIRP has made this dogmatic error because they rely only upon Schwan's thermal hypothesis from the 1950s, and because their dozen or so experts have included no practicing medical doctors or biologists who understand this. Furthermore, they ignore or dismiss thousands of scientific studies showing mechanisms of harm (selected ones here <http://www.es-uk.info/wp-content/uploads/2018/11/02.3-Selected-ES-and-EHS-Studies-2018.pdf> ), including the recent National Toxicology Programme and Ramazzini Institute studies showing cancer in rats from near and far field RF – which were hardly reported in the UK press, and which ICNIRP dismisses! Half of the world has set much lower safety limits than UK, in the case of Russia, for instance, because they have studied the adverse effects of EM Fields on humans since the 1930s.

Medicines given to people have extensive pre-market testing (since the thalidomide scandal) – electronic and electrical devices merely have to conform to 'safety standards' – there is no pre-market testing for safety. Humans, however, can be symptomatic from EM fields, some severely. It is estimated that 3-5 % are moderately affected, some 20% mildly, and less than 1% severely. What might you notice? Headaches, tinnitus, brain fog, palpitations, dizziness and loss of concentration (brain fog) are common symptoms.

Over 20 years ago as a GP in Chard, Somerset, I was puzzled by a child's six week history of headaches. A careful history was taken, and all usual and serious causes excluded. After reading widely, I wondered if they were caused by an electric or magnetic field from the TV in the next room placed near the head of the bed 6 weeks previously. The mother reliably proved this by leaving the TV plugged in some nights, and not on others – the child's headaches correlated with the TV being on standby. This led me to study the area from literature and research available, and diagnose a number of others with symptoms caused by environmental agents. The key issue was that peoples' symptoms resolved when the EM field was switched off, and returned when on again. This occurred for some people with wifi routers. My suspicions were supported when the Powerwatch Handbook was published in 2006. More recently, as a trustee of charity ESUK, I have seen many cases of people affected by EM fields, some severely, and been privy to much recent scientific research. The widespread use of wifi

(transmitting 24/7), cordless phones (transmitting 24/7), alarm sensors (transmitting 24/7), and other domestic hi-tech use, including the frequently transmitting smart meters, is causing some people symptoms that range from mild to severe. In fact, with smart phones next to them, and blue tooth in their cars and computers, many people are irradiated 24/7 by what much of the insurance industry calls a 'pollutant' – and declines to cover liability for. Those unaffected by symptoms may be tempted to ridicule those who are. The whole issue is an inconvenient truth, and unfortunately because doctors are not taught about the issue, most people will not be diagnosed except when they themselves observe cause and effect.

The current UK Government response to MPs who write on behalf of their affected constituents is unhelpful, especially as it relies upon ICNIRP's outdated assertion that 'non-thermal equals non-harmful' – in contradiction to thousands of scientific papers. It also relies upon a scientific approach that is flawed, flawed because it ignores the case stories of the MPs' constituents, and relies upon research with an incomplete conclusion, such as the 2005 Kings College study, where the psychologists concluded that the effects were psychological – because they failed to take into account the fact that 'Sham' was not sham, it was active – so sensitive participants responded to all three exposures. In fact this study is excellent in all effects except the conclusion (see p6-7 of <http://www.es-uk.info/wp-content/uploads/2019/08/ES-letter-psych-paper-Novengineers-2018.pdf> for a critique) <http://www.es-uk.info/resources/> has other critiques

The UK Government advice on RF (2G, 3G, 4G etc) unfortunately derives its health advice from this approach, based upon ICNIRP, who seem to wish to ignore all the recent scientific evidence on longer-term effects in favour of concentrating only on six minute short term heating effects, it is not certain why. The hopeful fiction that arises is "Our Safety Guidelines keep you healthy" – unfortunately, the Emperor has no Clothes.

Two recent useful papers are 1 Stein and Udasin 2020 on Electrosensitivity <https://www.ncbi.nlm.nih.gov/pubmed/32289567> and the two editors of Handbook of Biological Effects of Electromagnetic Fields, Barnes and Greenebaum, 2020 on setting exposure limits <https://onlinelibrary.wiley.com/doi/abs/10.1002/bem.22267> who make the important point in the abstract that Current limits for exposures to nonionizing electromagnetic fields (EMF) are set, based on relatively short-term exposures. Long-term exposures to weak EMF are not addressed in the current guidelines. Nevertheless, a large and growing amount of evidence indicates that long-term exposure to weak fields can affect biological systems and might have effects on human health. If they do, the public health issues could be important because of the very large fraction of the population worldwide that is exposed. The whole paper has over 50 references [www.ehtrust.org](http://www.ehtrust.org) has assembled much useful research

The ES-UK website also has a great deal of information assembled by the Chair, and others, with hundreds of scientific studies quoted, and two letters from myself both for patients to show to their doctors, to help consider the diagnosis <http://www.es-uk.info/wp-content/uploads/2020/07/ES-GP-patient-letter-June-20.pdf> , and for doctors to help them understand the issue.

People with ES may well be the canaries in the coalmine, warning us all of the potential effects upon our health – however, society must consider carefully whether it is happy to sanction the 24/7 irradiation of people with what the insurance industry describes as a pollutant, and how to ensure long term health. One only needs one black swan to disprove the hypothesis that all swans are white – so we can no longer maintain the hopes that 'Non-thermal=non-harmful' and 'non-ionising=non-dangerous', as there are now thousands of black swans

Andrew Tresidder 29.8.2020 <http://www.es-uk.info/wp-content/uploads/2018/11/02.1-ES-UK-Information-Leaflet-2018.pdf>