

The risks to health from pulsed microwaves

An Interview with Ingrid Dickenson
by Patty Hemingway MARH



Patty Hemingway graduated from the Hahnemann College in 1998, and practises in South West London. She has been an active member of the ARH since its inception and is a member of the editorial team of *Homeopathy in Practice*. She also writes for various newsletters with the aim of raising public awareness of health issues in general and homeopathy in particular. She would like to see a greater awareness of the impact our environment has on health and well-being, which is why she chose to interview Ingrid Dickenson about her research into the immediate and potential effects of electro-smog on human health.

The realisation that I was being acutely affected by pulsed microwaves came as something of a shock – quite literally. Well on the way to recovery from a long illness, out of the blue I had a recurrence of old symptoms in the form of tachycardia, spiking blood pressure and palpitations whilst relaxing at home in a soothing bath at the end of a busy but normal day. Why?

I had been in the habit for some months of scanning my home for the presence of pulsed microwaves, using an Accousticom (1), checking for hot spots caused by signals from mobile phones, masts, and DECT (digital cordless) phones and I knew that the bathroom had been clear. However, now it appeared that both the bathroom and the adjacent bedroom were alive with digital pulsed frequencies which had not been there previously. I soon discovered the source was my neighbour's wireless broadband connection which he had just installed near the party wall.

A few weeks later a client asked me to scan her house because she was overlooked by four BT masts, and as I stood in probably the 'hottest' spot in the house, directly in the beam, I felt myself begin to haemorrhage. Over the next two weeks I was unable to stop the bleeding, and treatment with homeopathic remedies had no effect until I took *Radium Bromide* and *Radioactive Fallout* in potency, after which my menstrual bleeding returned to normal.

By now I was also noticing that my clients were reporting symptoms that could be directly linked to their exposure to various sources of pulsed microwaves, and children seemed to be particularly badly affected, often becoming hyperactive or developing skin conditions which did not seem to respond to homeopathic treatment, but which did improve when they were away from their usual environments. I observed that these children were either living in the vicinity of phone masts, as many as three or

four clustered together, living beneath pylons, or were used to playing with their parents' mobile phones, cordless phones and computers. In one case, after I had suggested that the child be denied all contact with digital phones and computers, his mother reported that his skin cleared completely within a week and before he had taken a single homeopathic remedy.

I had already stopped using a mobile phone myself for all but emergencies, had caused strife at home by throwing out the cordless phone my children were desperate for and I was avoiding any public areas where wireless technology predominated. So I was stunned to discover that I had become so sensitive that even minimal exposure could cause such strong symptoms.

In the course of my quest for health I had come across Ingrid Dickenson, a practitioner of energy medicine, who teaches 'Earth Breathing' (2) and is an outspoken opponent of mobile technologies. For several years she was the scientific director for Mast Sanity, an organisation which campaigns for the safe siting of mobile phone and Tetra masts, and is now in the process of setting up a UK branch of HESE (the Human Ecological Social and Economical Project) (3), to bring awareness of these problems to the attention of the medical



Ingrid Dickenson

and scientific community. As a German speaker she is well connected with the German scientists in this field, as well as European colleagues working within HESE, and she has had access to research which is not readily available in English. I went to see Ingrid in her green oasis of a house in Wimbledon to find out how she became involved in this campaign, exactly what the problem areas are and what research is currently underway.

Ingrid was aware from the start that mobile phones should come with a health warning. 'I immediately thought it would be very counterproductive to have pulsed microwaves interfering with brain wave rhythms,' she said. 'But it wasn't until about 1995 when my son started having excessive nose bleeds, and migraine headaches, that I began looking into the effect of mobile phone masts. Actually, I didn't know there were masts near his school, as I couldn't see them. It was only after two blood tests had shown nothing more than a reduced white blood cell

... mobile phones should
come with a health warning

count, that I found out about the masts.'

She contacted a German researcher, Prof. Dr von Klitzing, former director of the Clinical-Experimental Research Laboratory at the University of Luebeck, who was investigating the effect of EMFs (electro-magnetic fields) on living organisms, and he told her that her son's blood test results were consistent with the effects of exposure to pulsed microwaves at low frequencies, which had been identified in rats.

By now, her son was very unwell, and Ingrid explains how, 'under protest, and just before his A levels, I took him out of that school, and after that the nosebleeds and headaches stopped.' She has since discovered that nosebleeds and headaches in children who spend time near masts are common (not every child is affected of course – it depends on how robust their immune system is).

Predictably, the school reacted by refuting the research she showed them, saying that 'the radiation is much too low', but this only spurred her on to convince people that this was an area that needed more research, and she explained how she wrote a paper for Merton Environmental Forum (her local authority) calling for more research into pulsed microwaves, because although people might have a choice about whether or not to use a mobile phone, the council needed to have a view on the safe siting of masts.

Most of the research that Ingrid quotes comes from outside the UK; Sweden, Austria and Germany are particularly active in this field, and as she points out, 'it is very important that we have cross-border communication because there was a lot of scientific research carried out in the former Soviet Union and in Poland. In 1976 Russia went so far as to ban the use of microwave ovens, but overturned this legislation after Perestroika. We also know that Russia has extremely stringent guidelines with regard to non-ionising radiation (i.e. phones and masts), which may strike some as strange when they appear to have less stringent guidelines about ionising (gamma) radiation; so we should be very worried that they are so concerned about non-ionising radiation.' (4)

It seems that over 1,500 of the Russian papers have been translated



into German, by Prof. Emeritus, Prof. Dr Med Karl Hecht, and cover everything to do with EMFs (Electro Magnetic Fields) from the effect of power lines to mobile phone frequencies. Ingrid would like to see these translated into English, which is one of the reasons she started HESE Project UK, in order to be able to present evidence that there is an effect from EMFs to the British Government.

'Microwaves themselves are very high frequency electro-magnetic waves, in the non-ionising radiation band. In the second generation GSM mobile phone system they are carried by a carrier frequency, which is in itself quite high at between 900 (Vodafone) and 1800 (Orange) Megahertz, and the 3G system also uses a powerful carrier wave. The carrier wave is the frequency the message is sent out on, but it isn't the strength of this carrier wave that we are most worried about. **What concerns us is the modulation within that high frequency carrier wave, where you have a pulsed modulation of 217 Hz, that's 217 cycles per second, and it is that modulation that has the bio-active effect.**

Last year the Health Protection Agency took over the regulation of non-ionising radiation emissions, from the National Radiological Protection Board (NRPB), and as Ingrid explains, 'all the HPA will say is that they are well within the ICNIRP (International Commission for Non-ionising Radiation Protection) guidelines, and as a result they declare that the frequencies used are safe (5). Yet the scientists I have contact with who are researching this field will say that they need to monitor the effect of

Surrounded by tall buildings, the efficiency of this lamp post mast is reduced. However, people living in the adjacent flats will experience the maximum intensity of its microwave beams, while the transmitter label warning people not to get too close can only be read close up, because of its size and height off the ground.

the extremely low frequency (ELF) pulse and not the high frequency carrier wave, and that the guidelines refer to the specific absorption rate (SAR) or thermal effect, and are, as a result, focused on preventing a rise in tissue temperature only'. (6)

The problem with extremely low frequencies

Ingrid explains: 'ELFs occur under 300Hz or cycles per second, and when pulsed, provide a direct way to interfere with the body's own rhythms. These rhythms within the body are all incoherent, but all the incoherent rhythms together create one harmony – so what can happen if you start interfering with this harmony by introducing coherent rhythms? Well, suppose you have this beautiful symphony going on, but then in the background a constant beat starts up which doesn't come from the orchestra. Well, if it remains constant, then in the end it will set up interference and all the players will lose their own beat. This is what happens to brain wave rhythms when they are interrupted by pulsed signals; it is sometimes called "entrainment".'

One way to observe this for research purposes is to monitor EEG (electroencephalogram) patterns, and as Ingrid explained, when Dr von Klitzing tried this, he noted a change in the EEG pattern when people were near a mobile mast which remained for some time afterwards and did not revert back to the original pattern for several hours after the signal had been switched off. This research has been disputed by some researchers who say they could not replicate the results. However, the value of such studies is always going to be dependent on the design and choice of frequencies, because as physicist

Masts like these, disguised as trees, are used to persuade people that the only harm from masts is their appearance. But they are expensive as well as being identical and obvious.



Gerard Hyland told Ingrid:

In assessing the relevance of laboratory studies into the effects of exposure to the signals from mobile phone base-stations, it is important to note that the laboratory signals often DIFFER from the signals emitted by commercial base-stations, because certain bioactive low frequencies (around 2Hz and 8Hz) that characterise the signals emitted by real base-stations, are absent.

If scientists focus only on the carrier signal and do not include the pulsed signals at 217 Hz, and other harmonics at 2Hz or 8Hz, then their research will not present a true picture of the effects of these ELF's which have the potential to disrupt brain-wave rhythms.

ELFs and sleep

We all know that quality sleep is important for health, so what Dr von Klitzing observed should be of concern, explains Ingrid, 'because he saw an unusual formation of alpha rhythms: now when you are going to sleep you need to lose the alpha waves in order to go deeper

as the other lower rhythms start rising so you pass from alpha to theta then to delta, and that is the deep healing sleep that we all need. However, when people are in the vicinity of a mast something unusual happens in the brain which has the potential to block the rise of theta. I have also heard it suggested that if you use your mobile before going to bed you cannot achieve REM (Rapid Eye Movement) sleep, and something happens to block the natural sleep cycle.'

'Of course', says Ingrid, 'that is not the only thing that interrupts sleep. A lot of people now sleep with the TV or a light on, which will stop the pineal gland from producing melatonin. When you sleep in complete darkness serotonin production ceases and melatonin is produced instead. We know that the pineal gland is extremely sensitive to changes in electro-magnetic fields. For example, it is influenced by sunspot activity because sunspot activity impacts upon the Earth's electro-magnetic field. This also explains

why, when people travel across timelines by air they will become deficient in melatonin because of the sudden change in the magnetic field, and changes in light frequencies, which confuse the pineal gland.

'When you are exposed to ELF's by living close to a mast or even having a DECT phone in your house, the extremely low frequencies within the pulsed magnetic fields are actually registered by the pineal gland which behaves as if it is receiving light frequencies, and will shut down production of melatonin. And if you don't produce melatonin you are not producing your most important onco-static agent, in other words you are suppressing your cancer suppressor. I predicted years ago that night-workers would be more prone to cancer simply because they cannot sleep in darkness during the day, and so fail to produce melatonin, and the whole circadian rhythm is interrupted. It is not rocket science because we know that electro-magnetic pollution throttles melatonin. What we don't know yet is

1/4 Advert
New Vistas

1/4 Advert
Advert. in
Medicine

whether the receptors don't receive it, or whether the pineal doesn't produce it. If it is a receptor problem then supplementing with melatonin could be a waste of time.

'What we do know is that the melatonin connection is an important one because coupled with the loss of REM sleep it seems our bodies cannot go into repair. REM sleep is essential for our mental and physical health, so perhaps this is one reason why we now see a huge amount of depression, headaches and sleeping disorders; three symptoms which come up time and again in people exposed to ELF's. Medical science's response has been to diagnose a new disorder, "daytime fatigue" !'

Regulation of ELFs

From what is known so far, surely a few alarm bells ought to be ringing in the ears of our politicians and regulators? Ingrid thinks it will take a change in political will to face facts and exercise greater caution in regulating these emissions. 'The real problem', she sighs, 'is that ICNIRP has not listened to those scientists who say they are not worried about the 'heat effect' of mobile phones, but claim that it is the biological 'a-thermal' or pulsed effect that requires scrutiny. ICNIRP sets the standard here, but they only recommend safe levels in terms of the heating effect of microwaves on tissue.'

Concerns also need to focus on the local authority planning regulations for mobile phone masts, because as Ingrid points out, no-one is considering the obvious. 'The phone companies have to remain within emission guidelines for each individual mast', she explains, 'but no account is taken of the cumulative strength of emissions where these single masts are clustered together. The guidelines only refer to limits for emissions from each individual mast. So although there are regulations governing mobile-mast radiation emissions, not only are they the least stringent in Europe (7), but they allow for several masts to be sited together which will obviously increase the amount of radiation emitted from one site.'

Research evidence

Ingrid is clear that, 'in terms of research we should be looking at which frequencies are bio-active

and can cause a disturbance to our naturally occurring frequencies, and which frequencies are bio-supportive, or work with our biological system, as well as researching what effect all these frequencies in the lower range actually have on the body. UK researchers, and we need bio-physicists to do this work, have not focused on that because they assert that pulsed microwaves from masts can't have an effect because the voltage is too low. European researchers such as Gerd Oberfeld, or Michel Kundi (Vienna University) have published research on the effects of EMFs on the body. In the UK we have Gerard Hyland, a theoretical physicist who has explained this clearly and is willing to speak out, and yet what happens is that as soon as someone

Bognor Regis centre: 02 GSM and Hutchison 3G, with TETRA, since removed as a result of popular protest – and because the landowner had not given consent.



All the incoherent rhythms together create one harmony – so what can happen if you start interfering with this harmony by introducing coherent rhythms?

in the UK does speak out there are attempts to discredit them, so no-one will listen (8).

'There has been research which shows that the blood-brain barrier can be broken by the frequencies used in mobile telephony, and this has huge implications, because this natural barrier exists to protect the brain from toxins. So we could be laying ourselves open to all kinds of poisons which the body may be able to deal with, but the brain cannot.'

Research by Ross Adey and others has shown the damaging effect of certain frequencies on the brain, and that a 16Hz frequency at certain intensities and in certain temperatures can induce a calcium ion efflux from cells. Calcium ion is a ubiquitous and important cellular messenger controlling processes as diverse as fertilisation, learning and memory, contraction and secretion in the body.

More recently, Dr Warnke in Germany has discovered that pulsed microwaves increase the production of nitric oxide which leads to mitochondrial damage and is geno-toxic.

DECT phones

DECT (Digital Cordless Telephones) seem to pose even worse risks to the hyper-sensitive because they act like mini masts inside people's houses, and they pulse at 100Hz which as Ingrid reiterates, poses a danger to health because, the lower the pulse the more it pulses using the language of your own body's rhythms. In addition the DECT has an extremely strong pulse, which can penetrate walls and so fills the whole house, as well as the house next door. Ingrid says that compared to smoking the DECT is a worse contaminant, which makes it all the more lamentable that research into the health effects of mobile and cordless phones is sadly lacking, when compared to the quantity of research into passive smoking. When, for example, the health effects reported to Mast Sanity are passed onto government researchers, they are always classed as 'anecdotal evidence' and yet taken together they amount to a strong case.

One of the common effects of DECT is the erratic rise and fall in blood pressure which can be easily measured. There is also a very simple blood test which Dr von Klitzing

FEATURE

used years ago to show how the red blood corpuscles don't develop properly in children, and if there was the political will to examine the health effects, other tests could be developed quite easily.' The only test currently available (9) is complicated and expensive as blood has to be sent off to Germany for testing. HESE will be looking into making available simpler and cheaper tests, which will demonstrate the ways in which electrosmog is damaging our health.

Wireless computers

Ingrid is shocked at the casual way in which wireless technology has been accepted in schools. 'To have our children exposed to wireless computers is horrendous,' she says. 'The fields are extremely strong. A lot of children have been reporting night terrors, and feel very poorly with this.' At least one class-action lawsuit has been filed in the US, by parents, against a school which installed wireless computers, and 400 scientific articles were cited in support of the claim (10).



Digital TV and radio

'Digital TV and radio present more hazards in the home. DAB radio on a frequency of 10Hz has a very spiked pulse, but the HPA will tell you that there have never been any problems with radio and TV transmitters; this is not true. There are documented cases, especially where short wave transmitters were implicated, and we can't forget that last year the Italian Government gave a cardinal a suspended 10 day prison sentence for sending out too strong

Lodge Hill Residential Activity Centre for young people (Pulborough, West Sussex) hosts an array of Orange, T-Mobile and O2 outside its main block and meeting hall.

a signal from Radio Vatican, when nearby residents complained that the cancer rate had gone up since broadcasting began.'

Mobile phone masts

'In Germany, Austria and Switzerland, it is the doctors who are raising awareness of the risks to health of mobile phone masts, as they report steep increases in cancer, heart attacks and blood pressure problems in younger people, and an overall increase in ill-health. They are appealing for a halt to the erection of further masts until more research can show that they are completely safe.' The Freiburger Appeal, one of many similar appeals published in Germany, is available in English on the Mast Sanity website, and lists illnesses which this large group of German doctors believe are caused by exposure to pulsed microwaves.

Tetra

I had already read reports of rapid cancers being attributed to the new police communication system

1/2 Advert
Alt Training
Course

called Tetra (11), so I feared hearing the worst when I asked Ingrid for her views on this. 'Tetra pulses at 17.8Hz which is within our natural beta thinking wave rhythm, so yes people are badly affected by Tetra,' she replied. 'Very often,' she went on, 'what is reported is numbness, night terrors, and total disorientation.' She has other unanswered questions, too: 'Why did the British Government choose this system when it is much more expensive than the previous system, Tetrapol, and why use a frequency which has the potential to affect human brain waves? Are we all guinea pigs?' (12) As Tetra becomes more widely used by other organisations it will become even more invasive, and operating as it does on a very low frequency (lower than GSM or DECT) it is very bio-active.

Schumann Resonance

And there is more unsettling news as Ingrid goes on to discuss what we know about the natural pulse which occurs within the Earth/ionospheric cavity, the Schumann Resonance (2), which is the basic Earth frequency and its fluctuations. 'It is', says Ingrid, 'being drowned out by man-made frequencies, and we should be concerned because it is the underpinning of life on the planet.'

'Schumann Resonance has a main frequency of 7.8 Hz, so its strength (1/1000 of a Volt) is minute, and yet as Dr Neil Cherry has shown, our biological system is very much affected by fluctuations in Schumann Resonance. If one thousandth of a volt can have an effect, then we need to consider what effect much higher voltages are capable of producing, when considering the effect of radiation from mobile phone masts.' (7)

'We urgently need information on the effect of particular frequency ranges on the biological system,' she continues, 'and in particular the so-called 'window frequencies', where the brain is very receptive. We know that the brain reacts to minute electro-magnetic fields, such as Schumann Resonance, but beyond that we know very little.'

Do safe frequencies exist ?

I suggested to Ingrid that mobile technology could be safe if it used different frequencies. She replied that we simply do not know, so 'we have to carry on the research

of people like Neil Cherry and Ross Adey, and Dr Wolfgang Ludwig. There are still a few people who are knowledgeable about this and could be encouraged to research a frequency range that is bio-supportive instead of bio-destructive.' Ingrid's own attempts to interest mobile phone companies in this were met with a blank refusal, as it would have been a tacit admission that there are problems with the current frequencies. Her

'Short-term memory is certainly affected by certain frequencies'

gloomy prediction is that it will soon be too late to make the change anyway, since there will be irreversible damage done to our DNA.

'Short-term memory', Ingrid states, 'is certainly affected by certain frequencies, and this development seems to relate once more to interference with the Schumann Resonance which vibrates at approximately 8Hz, followed by its harmonics, which interestingly is the same frequency at which the hippocampus, the area of the brain responsible for short term memory, vibrates. People are experiencing this memory loss and even joking about it but sadly, nobody has woken up to the fact that there is a mechanism for this and the mechanism is the interference with the frequency of the hippocampus, and the loss of the Schumann Resonance, which the brain can't detect any more. 'Scientists are cautious in mentioning this because as soon as they do, they are disregarded and marginalised. It is strange because we are talking about a frequency that is measurable. I actually asked the NRPB about this in 1995, and they responded by asking me whether Schumann Resonance wasn't "a term from Parapsychology"! I find this outrageous and ignorant, when it is a recognised term from the world of physics.'

Protecting ourselves

I was interested to know what we can do to protect ourselves.

'Firstly,' says Ingrid 'make sure that you are not sleeping in a beam from a mast or a DECT telephone. There is a particular problem with 3G masts, because their reference frequency becomes 100Hz, similar to DECT, when they are not so busy, i.e. at night. Electro-magnetic pollution can be created by mobile phones, DECT, digital TV and radio as well as the radio frequency identification tags on clothes (RFID system) in shops, which are activated when you pass through the checkout or exit.

So it seemed that shopping was, for me, still not a safe option, but surely, I pleaded, couldn't I protect myself in my own house? Ingrid agreed that we all needed to shield ourselves from these microwaves and told me about various products which are useful such as fabrics, wallpapers, foils and netting to cover walls and windows. She



This Orange GSM and 3G, and Vodafone 3G and GSM are just two of eight base-stations at Worthing Football Club, a small ground surrounded by dense residential property. Floodlights are a favourite shared support for mobile antennae. BT helped sponsor the new lighting towers that now bear the antennae.

thinks that protective paint will also be developed. I thought it sounded like living in a Faraday Cage and this is evidently the case: in all these products there needs to be metal and usually a metal mesh which does act like a Faraday cage and will not let photons through.

'However,' she continued, 'you have to be careful because you could just be shutting in a signal, in which case it releases another source of pulsed microwaves, although not as strong as a direct beam from a mast. Microwaves are like water, so they find the easiest way in, and every time you open a door or a window you could be letting them in and then trapping them there when you seal off the door or the window.'

Ingrid hopes these measures will be short term and that in the longer term we can look forward to safer technologies, but until then her best advice is to 'have your house scanned and make sure you are not sleeping directly in a beam, especially a Tetra beam, but don't expect the HPA to take you seriously if you can prove that your house is full of ELF's as they do not recognise electro-smog as posing a danger'. This is in spite of a report in *The Times* on 11 September 2005 which implied that the HPA was about to issue a report admitting that an increasing number of people were suffering from electro-sensitivity syndrome. So far no action has followed and Sweden is the only European country to recognise this syndrome.

Ingrid also advises that you regularly check the lamp posts in your street, because one day you might find a little box has appeared outside your house, and that will be a 'repeater', which is the latest thing, and just as bad as a big antenna, and it will be sending strong signals straight into your house.

By now I was aware that there was a long way to go before we could feel safe, even at home, but then Ingrid added one more obstacle to our protecting ourselves. 'All this,' she said, 'is very expensive, whether you acquire a scanner and do it yourself or ask somebody who knows what to

look for to do it for you and advise about protective products.' Ingrid sighed and I knew exactly what she meant!

There will be a second part to this article relating to various treatment methods (including homeopathy).

FURTHER INFORMATION

Institute of Science in Society website has information on the dangers of mobile phones and EMFs: www.i-sis.org.uk
Mast Sanity: www.mastsanity.org
Power Watch: www.powerwatch.org.uk

REFERENCES

Adey, W.R. et al (1999) 'Spontaneous and nitrosourea-induced tumours in the central nervous system of 344 rats chronically exposed to 839MHz modulated microwaves'. *Radiat. Res* 152
Byus C.V. et al & Adey W.R. (1984) 'Alterations in protein kinase activity exposure of cultured human lymphocytes to magnetic modulated microwave fields', *Bioelectro* 5
Byus C.V. et al & Adey W.R. (1984) 'Increased ornithine decarboxylase activity in cultured cells exposed to low energy modulated microwave fields and phorbol ester tumour promoters'. *Cancer Res* 48
Cherry, Dr N. (2001) 'Schumann

Resonances, a plausible biophysical mechanism for the human health effects of solar/geomagnetic activity' 9/8/ www.land-sbg.gvat/cherry-Schumann-Resources.pdf
Cherry, Dr N. (2002) 'Criticism of the health assessment in the ICNIRP guidelines for radio frequency and microwave radiation (100Hz - 3000Hz)' www.emfguru.org/cellphone/cherry2/ICNIRP-2.htm
Cherry, Dr N. (2003) 'How exposure to GSM and Tetra Base-station Radiation can Adversely Affect Humans' www.risiko-mobilfunk.at/rmf-byland.html also www.powerwatch.org.uk/docs/Hyl-and-Basestations-0703.pdf
Draper et al. (2004) 'Childhood Cancer and Electromagnetic Field Exposure from Powerlines', unpublished, reported in *The Times* 30.10.2004
Ludwig, Dr W. (1999) 'Informative Medizin', *VGM Verlag fuer Ganzheitsmedizin*. Essen
Postow E & Swicord M.L. (1996) 'Modulated fields and "window" effects', *Handbook of Biological Effects of Electromagnetic Fields*. CRC Press
Sahley, B.J. (1996) *The Melatonin Report*. San Antonio: Pain & Stress Publications
Salford L.G. (2001) et al 'Permeability of the blood brain barrier induced by 915 MHz electromagnetic radiation, continuous and modulated at 8,16,50, and 200 Hz', *Micros.res* 27
von Klitzing, Dr L. (1996) 'The influence of pulsed electron energetic fields on the electroencephalogram of humans', *Science* edn 9, published in German by the Radio Research Council (RCR) July 1996. (Dr von Klitzing now runs a clinic in Germany treating people with electro-hypersensitivity.)
Walleczek J. & Budinger T. F. (2003) 'Pulsed magnetic field effects on calcium signalling in lymphocytes: dependence on cell status and field intensity', *FEBS* 314
Warnke, Dr U. (2004) http://www.hese-project.org/delemf/WissenschaftForschung/Warnke_Dr.%20rer.%20nat._Ulrich/Mobil-%20und%20Kommunikationsfunk.pdf. HESE Project, April 2004, Saarland University

Patty Hemingway can be contacted at pattyhemingway.pbhc@ouwip.com.

Footnotes

(1) The A-COM microwave monitor is sensitive to signals as low as 0.01 V/m and detects sources operating in the range from 50MHz to well over 3000 MHz (3 GHz). Available from Perspective Scientific. Tel: 0207 486 6837 or www.perspective.co.uk
(2) For more information on Ingrid Dickenson's work and Schumann Resonance see: www.earthbreathing.co.uk
(3) For further information on HESE go to www.hese-project.org
(4) For an interesting film about the lack of government attention to the effect of low-level radiation around Chernobyl contact The Low Level Radiation Campaign, www.llrc.org, which can supply a DVD recording of a recent conference in Kiev, involving Russian and international scientists and bodies such as the International Commission for Radiological Protection.
(5) E.g. ICNIRP suggest a limit of 100 microteslas for overhead power line emissions, while the recent Draper Report, the largest study ever into childhood leukaemia, suggests a rise in the risk of leukaemia from emissions as low as 0.4 microteslas.
(6) A useful summary of the debate over measuring and monitoring signals from masts and mobile phones can be found in 'Electro-pollution: keeping safe in a sea of EMFs', What

Doctors Don't Tell You, 2005
(7) EMISSION GUIDELINES COMPARED: 900MHz frequency masts: Britain 41 V/m (recently reduced from 112 V/m); Switzerland 4 V/m; Russia 6 V/m; Italy 6 V/m; Luxembourg 3 V/m
1800MHz frequency masts: Britain 58 V/m (was 194 V/m); Switzerland, Russia, Italy and Luxembourg 6V/m.
(source: 'Electro-Pollution: keeping safe in a sea of EMFs', WDDTY 2004)
(8) 'The Price paid for 'blowing the whistle' in the Area of Mobile Phone Safety', G J Hyland, speech given at Starnberg/Iserlohn conference, Sept 2003.
(9) Details of this blood test are available from BioLab, London.
(10) Cited in WDDTY Nov 2005, 'Wireless network health risks', pp18-19. See <http://wifinet-news.com/archives/illinoislawsuit.pdf>
(11) Article by Dr Graham Blackwell, Citizens' Initiative Omega 22.7.04, cited in Green Health Watch Magazine, 27. www.greenhealthwatch.com
(12) 'Report on cell phone dangers and Tetra', B Trower, Sept. 2001, recommends 'Tetra system be halted until further research on safety has been carried out'. www.tetrawatch.net