

ES-UK NEWSLETTER

April 2008

ElectroSensitivity UK

charity number 1103018 www.es-uk.info

- for everyone sensitised by electro-magnetic radiation -

ES-UK is delighted and honoured that **Olle Johansson** has agreed to become a **scientific adviser** to the charity. He is well known internationally as one of the leading researchers on ES and its causes. He is Associate Professor and Head of the Experimental Dermatology Unit in the Department of Neuroscience at the famous Karolinska Institute and is also Professor at the Royal Institute of Technology, Stockholm, Sweden.

Dr. Magda Havas, of the Environmental and Resource Studies Program, Trent University, Peterborough, Canada, has also kindly agreed to become a **scientific adviser**. She is internationally known for her work on EMF pollution, has published widely, and has taught a course on the biological effects of EMFs since 1997.

We are also pleased that **Dr David Dowson** has agreed to act as a **scientific adviser** to ES-UK. He was, of course, a founding trustee of ES-UK and has done much nationally to help those discovering they have been sensitised to electromagnetic radiation.

The **trustees of ES-UK** held their annual meeting last month. They are anxious to press ahead with the two aims of the charity. These are to **support** those with ES and to **inform** others about ES and related areas. One new initiative is the network of regional coordinators which Roger Moller will be organising.

LATE NEWS

ES and exile

News is coming in of a UK citizen with ES being forced to leave her home in Britain to take refuge in Spain. Velma Lyrae hopes to avoid EMR which has almost destroyed her life and made her all but destitute.

Is this what we now expect in Britain, the land of liberty and freedom for the individual?

What are our MPs doing about the environmental pollution driving her out from her own country?

Why do the polluters have freedom to continue polluting, but sufferers from their pollution have to flee?

Where is fairness and justice? Do write to your MP.

In this issue of the ES-UK NEWSLETTER

- Both Sweden and Canada recognise **ES as a disability** – read the details! *pages 2-3*
- Have you removed all your **low energy bulbs** yet? See what Sarah says! And see what a problem some ballasts in street lamps can be. *pages 4-7*
- Some tips from Sandi Lawrence on **how to cope with having ES** – Sandi been contacting many people with ES and is a great support and source of practical information. *page 8*
- A picture page to show **frequencies and wavelengths**. *page 9*
- **ES and resonance** - some intriguing ideas sparked by more pains! *pages 10-11*
- Plus **world news** on **science, governments** and the **media**. *pages 12-20*
- And, if you can, do **inform others**. They could be the next to suffer! *pages 7, 21*

ES - what it is and how to describe it

Some ideas from several ES-UK supporters:

- Is it preferable to say 'I am electrosensitive' or 'I have ES'? I ask this because it has been my experience that people who have dyslexia, for example, prefer to say that they have dyslexia and not that they are dyslexic. It also implies that they may not always have dyslexia and that things can change.
- I prefer to start with 'I have a disability' (see DDA Act + a disability has to be taken seriously) and go on to say that I have become sensitised to electromagnetic fields & modern wireless communications systems. This cuts through the description problem for me & people are generally then interested & supportive and ask sensible questions, so I can bring in Sweden, ES-UK etc.
- I prefer 'people with ES', after discussing things with a mother of 'someone with Downs' (not 'a Down's person'): the emphasis should be on the person as normal but with an acquired condition, in our case from environmental pollution.
- ES is not an 'illness' but a 'functional impairment', as Professor Johansson says.

ES in Sweden

Olle Johansson, Associate Professor at the Karolinska Institute, Sweden, and a scientific adviser to ES-UK, writes:

In Sweden, electrohypersensitivity (EHS) is an officially fully recognised functional impairment (i.e., it is not regarded as a disease). Electrohypersensitive people have their own organisation, The Swedish Association for the Electrohypersensitive (<http://www.feb.se>; the website has an English version). This organisation is included in the Swedish Disability Federation (HSO, <http://www.hso.se>), the united voice of the Swedish disability associations with regard to the government, parliament, and national authorities. It is a co-operative body that consists of 43 national disability organisations with about 500,000 members in all.

In Sweden, impairments are viewed from the point of the environment. No human being is in itself impaired, there are instead shortcomings in the environment that cause the impairment (as the lack of ramps for someone in a wheelchair or rooms electrosanitised for someone with electrohypersensitivity). This environment-related impairment view, furthermore, means that even though one does not have a scientifically based complete explanation for the impairment electrohypersensitivity, and in contrast to disagreements in the scientific society, the person with electrohypersensitivity shall always be met in a respectful way and with all necessary support with the goal to eliminate the impairment. This implies that the person with electrohypersensitivity shall have the opportunity to live and work in an electrosanitised environment.

This view can be fully supported by the present national and international handicap laws and regulations, including the UN 22 Standard Rules (since 2007 turned into a UN Convention) and the Swedish action plan for persons with impairments (prop. 1999/2000:79 "Den nationella handlingplanen för handikappolitiken – Från patient till medborgare"). Also, the Human Rights Act in the EU fully applies.

In essence, the impairment is not caused by the person, but by the deficient or inferior environment.

ES and the Canadian Human Rights Commission

Policy on Environmental Sensitivities, June 15, 2007, (www.chrc-ccdp.ca).

Individuals with environmental sensitivities experience a variety of adverse reactions to environmental agents at concentrations well below those that might affect the 'average person'. This medical condition is a disability and those living with environmental sensitivities are entitled to the protection of the Canadian Human Rights Act, which prohibits discrimination on the basis of disability.

The Canadian Human Rights Commission will receive any inquiry and process any complaint from any person who believes that he or she has been discriminated against because of an environmental sensitivity. Like others with a disability, those with environmental sensitivities are required by law to be accommodated. The CHRC encourages employers and service providers to proactively address issues of accommodation by ensuring that their workplaces and facilities are accessible for persons with a wide range of disabilities. Successful accommodation for persons with environmental sensitivities requires innovative strategies to minimise or eliminate exposure to triggers in the environment. These may include: developing and enforcing fragrance free and chemical avoidance policies, undertaking educational programs to increase voluntary compliance with such policies, minimising chemical use and purchasing less toxic products, and notifying employees and clients in advance of construction, re-modelling and cleaning activities. Such measures can prevent injuries and illnesses, and reduce costs and health and safety risks.

The Medical Perspective on Environmental Sensitivities (abstract)

Margaret E. Sears (M.Eng., Ph.D.), 2007

Approximately 3% of Canadians have been diagnosed with environmental sensitivities, and many more are somewhat sensitive to traces of chemicals and/or electromagnetic phenomena in the environment. People experience neurological and numerous other symptoms, and avoidance of triggers is an essential step to regaining health. The CHRC commissioned this report to summarise scientific information about environmental sensitivities. This report addresses issues such as the definition and prevalence of environmental sensitivities; recognition by medical authorities; education and training within the medical community; origins, triggers and symptoms of sensitivities; impact of environmental sensitivities in the workplace; government policies and standards for building codes, air quality and ventilation as they affect individuals with environmental sensitivities; and guidelines for accommodation within the workplace. For people with environmental sensitivities, their health and ability to work rests with the actions of others, including building managers, co-workers and clients. Accommodating people with environmental sensitivities presents an opportunity to improve workplace environmental quality and workers' performance, and may help prevent the onset of sensitivities in others.

Accommodation for Environmental Sensitivities: Legal Perspective (abstract)

Cara Wilkie and David Baker, 2007

Environmental sensitivities are a group of poorly understood medical conditions that cause people to react adversely to environmental triggers. The CHRC commissioned this report, in which the researchers seek to establish the status of the issues related to environmental sensitivities from a legal perspective and as these relate to the protection of human rights. The researchers examined case law, consulted experts and examined secondary sources on accommodation of people with environmental sensitivities in Canada, the US, Australia, New Zealand and the UK, in order to answer several questions in the Canadian context: What is the status of the case law in these jurisdictions? Do building codes act as barriers to people with environmental sensitivities? What best practices emerge from the case law? How are conflicting interests reconciled? How can third parties be involved in the accommodation process? Where is the threshold of undue hardship? How are conflicts regarding accommodation preferences resolved?

ES and lighting – further comments

by Sarah Dacre

Since being filmed for the Channel 4 programme, *Allergic to the 21st Century*, late last year, I have made some significant alterations to the lighting at home. Roger Moller, was filmed in my home conducting an electromagnetic survey. One of Roger's recommendations, was to remove *all* low energy light bulbs and fluorescent strips from the house.

The results have been inspiring and I no longer have disturbing symptoms while at home during the winter evenings, (prickling across my skull, brain stabbing, eye strain and eye burning). These improvements were noticed within some 2-3 hours or removing these offensive bulbs from every room in the house. I am also now able to use a computer after 4pm when the lighting is switched on, and for several hours.

It is ironic that even after 30 months working on ways to improve my health, I am still discovering new ways of managing my environment. The moral of this story is to keep seeking for advice if your symptoms worsen or do not improve and keep an open mind.

ES - a personal account of difficulties with street lamps

by an ES-UK supporter who has asked to remain anonymous.

Please see the note at the end of this article and on page 6.

I have severe ElectroSensitivity (ES) and chemical sensitivity. The ES means I can't watch TV, or be in the same room as a computer, radio, CD player or mobile phone. I can use a landline telephone but only a hands-free one and I've had to take the fridge out of the kitchen and put it in a room I don't use.

Some lights are a problem, some aren't. Electricity pylons, mobile masts and WiFi are a nightmare. The combination of ES and chemical sensitivity has led to severe isolation and periods of homelessness as I've tried to find somewhere to live which didn't exacerbate already extremely disabling symptoms. I've had to sleep rough on pavements and in fields, often with no shelter, in the search for manageable housing.

My symptoms from ES are extreme cognitive dysfunction, palpitations, dizziness, shaking, impaired vision, sudden physical weakness or collapse. The symptoms can happen within minutes of being around problematical electro-magnetic fields and begin to ease off as soon as I get away from the equipment causing it. But it can take several hours to wear off completely and I'm often left feeling exhausted and drained for much longer. Repeated exposures have a cumulative effect and I'm disabled for days on end – at its worst being bed-bound and needing carers to provide food, drinks etc.

Last year, I discovered I'm electrically sensitive to some streetlights. As you read this, bear in mind how *many* streetlights there are on just one street, let alone in a whole area. Also bear in mind most of us cannot afford to move to a remote country lane, where there are no street lights, in order to get away from the problem.

I live in a city near a small residential car park. My house is 50 metres away from it and there are two gardens between my house and the car park. Last year, two streetlights were installed in the car park and when they were on at night they made me so ill that I kept collapsing – I couldn't see, think or breathe properly. I couldn't always move. It was terrifying. These lights affected me across 30 metres of car park, 20 metres of garden and through the back wall of my house. It's surreal to be this sensitive, but painfully real.

Thankfully the room at the front of my house was just out of range of the lights, so I could sleep there and not be made homeless. However, this room was the kitchen and it took seven months to persuade the owners of the car park of the severity of the situation and to get them to change the lights. So for seven months I slept on the kitchen floor, feeling like a prisoner in my own home – particularly in the winter months when the lights were on from 4pm in the evening. From 4pm I was stuck in the kitchen (floor space 3m x 3m). In the morning, I'd drag my bedding back into my bedroom so the kitchen could be used for cooking and in the afternoon I'd drag my bedding back to the kitchen. It was an unrelentingly torturous seven month; not knowing if it would end and knowing the owners of the car park had comfortable homes to live in whilst, for the sake of changing two lights, I was sleeping on a hard kitchen floor. I felt like a caged animal and was getting progressively more ill because I had to leave the kitchen at night sometimes to go to the toilet and so would inevitably get hit with ES symptoms. The cumulative effects of this were increasing my debilitation. After a while I had a commode in the kitchen, but I hated this from a sanitary point of view.

I tried to find somewhere else to live. But it was very difficult as I was so ill and exhausted and most of my energy was used up in negotiating with the owners of the car park and trying to maintain my emotional equilibrium. However (with much help) I found a place. This happened to be in a different county and it was this that provided the key in understanding the problem. Just before I moved, I happened to be in the new area during the evening – when the streetlights were on. Horrifically I had the same reactions to all the streetlights in that area that I did to the lights in the car park. This was devastating. There was no way I'd be able to live there. What was going on? Despite five years of extreme ES I'd never had problems with streetlights before – neither going past them on the street or from indoors. This was so confusing. Both counties had the same variety of streetlights and the lamps themselves were the same range of orange shades (some are bright orange, some deep orange, some apricot). I was OK in one county, but not in the other, so it couldn't be the *colour* of light.

After long conversations with the local council's lighting departments it transpired the only differences were the ballasts (the control panels) of the lights. The streetlights I am severely disabled by have electronic ballasts. The ones I'm OK with have magnetic ones.

With the help of a council alderman we finally got the owners of the car park to change the lights to ones with magnetic ballasts. I can now use my whole house again and can walk down the street where the car park is without collapsing.

But this is not the end of the story. All counties are being 'encouraged' to change their streetlights to ones with electronic ballasts, since they are cheaper to run and possibly more energy efficient. The greener local authorities have changed their streetlights already. The others are currently replacing them more slowly, as and when the older style lights need fixing. But they may soon replace them across the board if it's financially better for them to do so.

Much like the banning incandescent bulbs in favour of using CFL's, more time is needed for ES people to liaise with the lighting industry and for the industry to develop energy efficient street lighting without electronic ballasts *before* the old style are replaced. Otherwise people who have ES to the new streetlights with electronic ballasts won't be able to walk or drive along streets at night (or even after 4pm in the winter). And some of us won't have any place we can live at all. There are three streetlights much closer to my house than the ones in the car park (that made me so ill). If they'd all had electronic ballasts I'd have been made homeless.

NB See the next page for an important difference between electronic ballasts and magnetic ballasts for people with different degrees of electro-sensitivity, and also Dr Havas' comments. As we all know, this is a complicated issue.

ES and lighting – more!

from Ruth Davis:

Electronic ballasts may be better than magnetic ballasts for people with mild ES (as in the article on pages 5-6), but it is most certainly NOT the case for severe ES sufferers. It's really important not to give advice which is aimed at the general concerned public but does not hold good for those of us already far down the ES road.

All the people I've spoken to who have problems with CFLs have equal or WORSE problems with the new type of lamps with electronic ballasts.

It is likely that these electronic ballasts will also be fitted in LED bulbs, and the High Energy Incandescent bulb being developed.

From Dr Magda Havas, of the Environmental and Resource Studies Program, Trent University, Peterborough, Canada, and a scientific adviser to ES-UK:

Health Hazards of Compact Fluorescent Lights (CFLs) and a much better solution

We have just completed a study on energy efficient light and have some interesting things

1. CFL

CFL emit RF through the air and also dirty electricity on wires at frequencies lower than 450 kHz. This means that if you plug in a CFL and turn it on, the entire circuit will have dirty electricity flowing along the wires and this can come into rooms other than the one that has the light. So my advice is not to use these 'dirty' CFL anywhere.

Notice that I wrote 'these CFL'. Some CFL are clean and do not produce dirty electricity. Of the 30 we tested, 5 were relatively clean electromagnetically. We have submitted our research for publication.

2. LED

Not all LED lights are the same. Some produce RF and dirty electricity as well. Any LED that converts DC to AC will have this problem unless they are properly filtered by the manufacturer. One company that we found to produce LED without any dirty electricity is Real UV Corp (www.realuvcorp.com/home). The owner of the company is Bill Myers, who is an American living in Taiwan. He's aware of this issue and produces bulbs that are among the cleanest we tested and very energy efficient. He has produced some that are affordable and as demand goes up, cost will continue to come down. One of his newest light bulbs is equivalent to a 75-watt light bulb and uses 4 watts of energy.

3. Filtering and shielding these lights

We also tested the Graham/Stetzer filters (www.stetzerelectric.com) and RF-reflecting film and fabric (www.safewirelesstechnologies.com) to reduce someone's exposure. Both work well but it doesn't make sense to buy these bulbs and then have to shield them. The only time you may want to consider filtering and shielding is if you are in a building (office/school) and cannot change the lighting. Then shielding and filtering your immediate surroundings makes sense.

Taken from: Gunni Nordstrom, *The Invisible Disease*, p.72

The Swedish Radiation Protection Institute warns against halogen lamps unprotected by glass covers as table lamps or working areas lighting since, over 8 hours, the radiation from a 50W halogen lamp, at a distance of 0.5 metre, is equivalent to an hour's summer sunshine.

Danish research detected from halogen lamps short-wave UC-C radiation (wavelengths of 200-280 nanometres) which does not normally reach us from the sun.

ES and some things to do!

- *from David Price, Co-ordinator, SPECTRUM*
I would like to suggest that you write to your MP telling him/her how you are affected by fluorescent tubes, low energy bulbs or halogen bulbs. Also how your life is restricted because of the lighting in your home and public buildings. It would be a good idea if you asked your MP to pass the letter onto their party's minister/shadow minister for health.
 - Have you signed the EMR Policy Institute's petition to 'Protect Human health from Electromagnetic Radiation'? <http://www.ipetitions.com/petition/bioinitiativeemrpi?e>
-

ES and Schools

The February *Newsletter* contained an article on the difficulties some parents and pupils face in the UK when a school refuses to face up to the disabling nature of ES. I happened to notice the Swedish approach from about 2000 (*Black on White*, 2004, page 57):

'Even schools are at times obliged to implement EMF-reduction for students with electro-hypersensitivity: We don't have computers or watch TV in our house. Our home has had its electric and magnetic fields reduced. The classrooms that our son is frequently in have also been EMF-reduced. This applies to the middle grades, junior high school and now high school. After this, our son has had no problems going to school. (Letter 408)'

ES and the NHS

No news of clinical help for those suffering from ES.

ES and taking action

from a supporter in London:

'Would it be possible to ask other supporter sufferers of ES-UK to unite together more often to discuss together the issue of Electrosensitivity and put pressure on the Government and the NHS to recognise what we are all having to put up with?'

Agreed! Let's all write more often to MPs, MEPs, doctors and others. They ought to know.

ES and how to cope

Sandi Lawrence offers some helpful advice from her experience:

Mental Confusion and Memory or Concentration Loss

Many people with ES speak of this debilitating condition which comes and goes, causing chaos, anxiety, negativity and sometimes a mild form of paranoia. We have to try to remember that it is just one of the effects of being bombarded by frequencies that are unnatural to us.

If you look around you and observe the behaviour of those who do not have ES, then you will realise that some of them are similarly affected, so this is not just an ES condition.

The EMFs also affect the animal life I watch. Birds fly into windows or misjudge distances or speed of traffic on the roads, as does other, non-flying, wildlife. Ducks and pheasants have been seen walking slowly across busy roads in a dazed state, while some rabbits and hedgehogs can 'freeze' before oncoming vehicles, whether the headlights are on or not. Smaller birds can clear their natural nesting areas. Dogs can refuse basic everyday commands or rebel in other ways in areas of high EMF emissions. Some dogs and cats lower their heads and body and refuse to enter the EMF zone, or they run away from it. Cattle group together in a field at the furthest point from the source of the radiation. Animals which can't escape from an environment become agitated and depressed. In time the condition of their fur or hair or feathers deteriorates.

What can we do to help ourselves?

The most important thing is to realise and accept that it is probably not us! It is more likely that it is the technology affecting us, and not us cracking up or getting premature senile dementia.

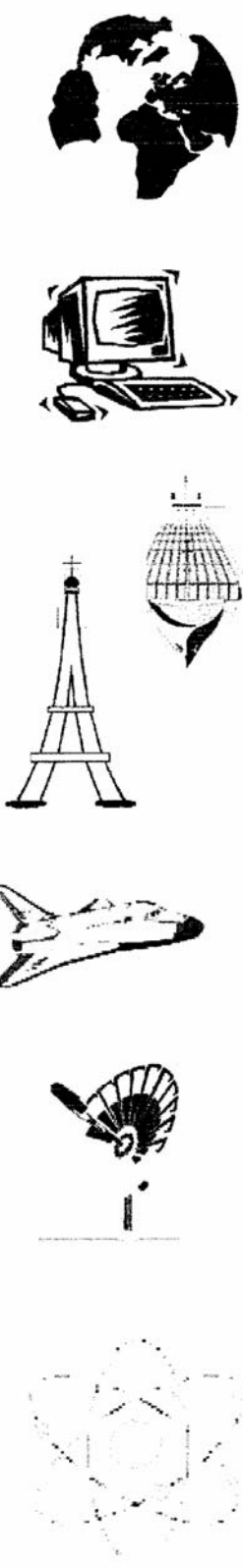
We must also remember to work on our condition. If we stimulate the brain in some way i.e. by reading a paragraph or page or chapter of a book (always pushing to read just a little more) or trying to complete a crossword puzzle, etc., we are encouraging the extra strength we don't realise we have to work towards overcoming the effects of the technology. Never think 'I can't'; always think 'I can if I try'.

It helps to learn to laugh at ourselves when we are affected. I make jokes about my silly lapses and the jokes get more ridiculous and amusing with practice. I tease my non-sensitive husband about his forgetfulness and purposely say something he would definitely not agree with, when he is obviously not paying attention, to see what his reaction would be afterwards. It dispels the negativity of these effects to laugh at them. Laughter, like music and other natural things, can heal us. Laughter is our safety valve.

We can prepare for the eventuality, too, when our minds are clearer. I wrote out a list of essential things I always have to do and placed it where I would always see it. I also try to remember to add a weekly reminder list so that I can look at both when I get confused or can't think straight. I have to confess that I can overlook both on bad days, but I get there eventually. My husband threatened to fine me for each lapse, but luckily he forgets!

We always neglect ourselves and others when we are affected and forget to pay bills, make phone calls, turn off the gas, give loved ones a hug, take natural supplements etc. We can also get a bit apathetic and negative. When I catch myself thinking 'I should go for a walk but I can't be bothered', I try to think of those who can't go for walks and end up feeling so ashamed of myself that I am out of the door and gone!

There are always others far worse than us, so to use this yardstick can turn a negative state into a positive frame of mind. If we try to stay more positive we will improve and survive.



Frequency	Typical use	Wavelength
1 Hz	<i>Earth and planetary signals</i>	300,000 km
10 Hz	<i>Brain waves</i>	30,000 km
100 Hz	50 Hz mains electricity	3,000 km
1 kHz		300 km
10 kHz		30 km
100 kHz	<i>Radio-navigation</i> <i>Long Wave broadcasting</i>	3 km
1 MHz	Medium Wave broadcasting	300 metres
10 MHz	Short Wave radio stations <i>CB radio</i>	30 metres
100 MHz	VHF FM radio stations <i>Police and Aircraft radio</i> <i>TV broadcasting</i>	3 metres
1 GHz	Mobile phones Microwave ovens <i>Radar, Satellite</i>	30 cm
10 GHz	<i>Fixed microwave links</i> <i>experimental microwave work - radar and imaging</i>	3 cm
100 GHz		3 mm
1 THz	<i>Atomic resonances</i>	0.3 mm
10 THz	<i>Infra Red</i>	30 μm
100 THz	Visible Light <i>Ultra Violet</i>	3 μm
1000 THz	X-rays <i>Gamma rays</i>	300 nm 300 pm 300 fm



The continuous electromagnetic spectrum

ES and resonance

If you have ES you may experience the 'zapping' described here. The notes try to relate microbiology to Bohr's 1913 quantum theory, adapted by Heisenberg's 1927 uncertainty principle in measuring a particle's position and velocity via spectroscopic frequencies, and Einstein's 1915 relativity theories on the electromagnetic field's priority over particles.

A person with ES recently said: 'I can even detect when someone has been in the presence of a mobile phone switched on for a long period.' I have also become sure that when I emerge from a cleaner environment, such as from hiding under my protective net, I sometimes feel the effects of EMFs coming directly from another person, and not simply from a transmitter. I accused one of my children's friends of having a mobile switched on when she got into the car, but she did not have a phone with her. She had probably been in a mobile phone or WiFi environment, but I still felt typical EMF pains.

Sympathetic resonance, or entrainment, occurs when an object vibrates at the same frequency as an external stimulus. When we become entrained to an external frequency, we lose the integrity of our natural internal frequencies. All living organisms have electromagnetic fields and a high proportion of water. EMFs have been shown to resonate in water. Some 55-60% of the human body is composed of water, in total about 10 gallons with 75% of the brain being water. The effect of external EMFs was first shown on plants when, in 1801, Herschel correlated sunspot cycles with varied crop yields. Solar radiation is an EMF source. In the 1940s Burr showed that voltage and polarity in trees reflected lunar and solar periodicity and variations signified approaching hurricanes.

Moreover, radiation and wave oscillation have long been seen as responsible for synchronising cell division around the body. In the 1920s Gurwitsch discovered mitogenetic radiation in onion roots, arguing that an EMF organised structural growth. Burr used saline water as a medium to measure electric fields from a salamander and discovered an energy field shaped like an adult salamander even in an unfertilised egg. In 1978 the US FDA approved electrotherapeutic devices to help heal bone fractures.

In 1930 Nrunori stated that the human organism reacts to and also radiates radio waves. Cazzamalli in 1934 claimed he recorded a radio 'beat' from humans subjected to HF radio waves. A previous experiment showed some sort of resonant frequency in each human. In the 1940s Van Everdingen discovered that EMFs affect the heartbeat of chicken embryos. He also discovered that UHF radiation changes the optical polarization of glycogen, an energy source for muscles, and that this change related to tumour growth. By re-rotating the polarization in extracts from tumour-producing mice and injecting this optically pure extract into mice with malignant tumours, the tumours ceased to grow. Previously Lakhovsky claimed he had removed tumours from patients with HF radiation and that a copper ring around a plant aided healthy growth and removed tumours.

Grigoreva showed that short UHF exposures helped severed nerve tissue regrow, while prolonged exposure suppressed regrowth. Experiments showed EMFs increase the secretion of histamine in the stomach and reduce the secretion of digestive juice. Fleming applied HFs to microorganisms, increasing and then decreasing the cell growth rate.

In 1961 Frey found that humans can hear 1310 and 2982 MHz microwaves at 0.4-2 mW/cm² as buzzing sounds. In 1963 he observed that pre-digital radio / TV signals use a smooth sine waveform, not normally able to penetrate the voltage gradient across nerve cell walls. Radar, mobile phones and WiFi, however, with short 'square' pulses, can do so.

Frohlich predicted in 1968 that, at a certain energy level, quantum or non-local coherence could occur on a biological scale for cellular protein. Since then, ordered water in the brain's microtubules has been assumed, allowing quantum-coherent oscillations. In 1970 Popp discovered the frequency at which photo-repair for carcinogens works and then found that this light, emitted even by plants grown in the dark, is stored in DNA.

Popp also showed that weak light emissions can orchestrate the whole body. By 1994 he discovered cancer patients lacked the natural periodic and coherent nature of this human biophoton radiation, whereas MS ones had too strong a coherence. Animals exchange photons, perhaps explaining the instant co-ordination in flocks of birds or schools of fish. Some fish use their own or another's electric organ discharges to locate other fish and communicate with them, and even avoid jamming each other's radiation by shifting frequencies, as discovered by Watanabe and Takeda in 1963. Similarly both direct electrical application and remote magnetic pulses can induce slow wave sleep, consolidating new memories, according to Marshall and Tononi in 2006 and 2007.

In 1984 Benveniste claimed that water could adopt characteristics of another substance. Although at first disputed by classical physicists, and perhaps affected by a researcher's endogenous EMF, most scientists, including Ennis in 2001, accept this magnetic water 'memory'. By 1995 Benveniste showed how molecules communicate with oscillating fields and Fesenko showed how exposed water had the same effect on membrane proteins as when cells were directly irradiated. Čolić and Morse in 1998 argued that EMFs change water structure in the gas-liquid interface – in 2005 Vallée suggested gas nanobubbles – for at least 8 hours, affecting calcium precipitation and free-radical production. In 1999 Del Giudice and Preparata showed that water molecules form low-energy coherence domains recording signals of other molecules, thus supporting Benveniste's claims that water can both retain and transmit information to pre-sensitised biosystems. In 2004 Smith concluded that 'water and living systems have macroscopic quantum properties that can give rise to a memory for frequencies, long-range effects, and entanglement between separated systems.' Also in 2004 Jacob showed that water previously exposed to weak EMFs affects the patterns and handedness of bacteria colonies for 20 minutes.

Computer audio cards record the magnetic fields by a magnetometer, the superconductor quantum interferometric device, or SQUID, assuming stochastic resonance to capture signal over noise. In 1994 Thomas began electromagnetic molecular signalling, or EMS, and from 2000 digitised recordings of EMF drug signals have been emailed to activate biological reactions in sensitive molecules elsewhere, part of quantum electrodynamics, or QED. For anti-cancer drugs, digital Taxol[®] appeared as effective as molecular Taxol.

The way water can entrain EMF signals may account for the increased electrical sensitivity many of us feel on wet days and in swimming-pool water. Rainwater may resonate with phone mast signals. In addition masts are apparently designed to increase signal strength during rainfall to compensate for rain attenuating the radiation. This can give me painful radiation spikes when rain does not cover evenly the whole of one mast cell-sector, leaving some parts dry with higher radiation. Nevertheless, meteorologists use records of mast power-outputs for accurate rainfall information. Even an itchy scalp during rainfall, as felt by some people with ES, may be related to entrained rainwater.

If the above observations are correct, there may be implications for SAR modelling and the calculation of total body burden of EMF exposure, especially for children with a higher proportion of water than adults. One might speculate whether water entrainment to EMF signals could even account for people living down-wind of power cables in rainy areas suffering more. Also of interest would be any links for colony collapse disorder in bees, the decline of frogs and various human illnesses, especially the timings of some cases of morbidity or mortality. Interestingly, homeopathic remedies apparently lose potentiation near magnetic fields or from heating, suggesting possible water resonance.

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1960);
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Leonard Ravitz, *Electrodynamic Man* (2002) pp. 40, 48-9, 52;
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Systems', *JACM* (2004);
Yolène Thomas, 'The history of the Memory of Water',
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ES and science

ES

The 2008 Regensburg study appears to support ES and counter the flawed Essex study. The alarming increase in EMF pollution in urban and rural areas is highlighted in Canada.

The German **Regensburg** study of 89 EHS and 107 controls, *Psychol Med.* 2008, showed 'significant **cognitive and neurobiological alterations** pointing to a higher genuine individual vulnerability' of EHS patients. The flawed Essex study had 44 people with ES.

Black on White: Voices and witnesses about Electro-hypersensitivity – the Swedish experience is a report compiled by Rigmor Granlund-Lind and John Lind. It includes evidence from over 400 people suffering with electrosensitivity in Sweden, with individual experiences of what it is like to suffer, introduced with general comments. It was published in 2002 and is now available on the internet:
<http://www.feb.se/feb/blackonwhite-complete-book.pdf>

Dr Andrew Michrowski (*Whole Life Expo*, Toronto, November 2007) reported on the rapid increase in EMF pollution.

1. Levels of passive or 'second-hand' irradiation

By 1980, environmental exposure to artificial signals in the radiofrequency / microwave band had risen by more than a trillion times, mainly from military use. Since 1980, the average 'second-hand' exposure in Southern Canada has risen from about 0.005 $\mu\text{W}/\text{cm}^2$ to the current background environmental range of 0.4 - 100.0 $\mu\text{W}/\text{cm}^2$, an 8 to 20,000-fold increase. 'Second-hand' means passive irradiation, not from a person's own mobile phone, microwave oven or WiFi computer, but from outside radiation. 100 km^2 in Southern Ontario have environmental exposures sometimes exceeding the Health Canada Safety Code 6 exposure limit of *c.* 1 mW/cm^2 (= 100 $\mu\text{W}/\text{cm}^2$).

Such illegal irradiation coverage, in trespass of body functions, can be expected to rise exponentially to several hundred km^2 in both Ontario and Quebec by 2010, as governments approve more wireless technologies. 'Second-hand' exposure is doubling annually in sparsely populated regions and tripling within more affluent urban zones. On the basis of environmental irradiation surveys, it can be deduced that in Toronto at least 25,000 people, 1% of a population of 2.5M, are being exposed for several hours daily to 'second-hand' environmental microwave emissions higher than permitted by Canada Safety Code 6, simply by working or living in high-density urban hotspots and that this number can increase during periods of wet ground as a result of precipitation. The densest groupings of multiple-frequency hotspots tend to be in traditional commercial cores, at transport nodes, near power-lines and near buildings with powerful electrical equipment.

2. EU recommendation

In 2000 an European Parliament expert analysis, comprised of WHO, EU and scientific peers, recommended that the average annual exposure near microwave transmitters should not exceed 0.1 $\mu\text{W}/\text{cm}^2$ and that anyone exposed to higher fields should receive regular medical attention, including blood analysis, EEG and ECG tests. All zones with higher exposure rates should have markings on the pavement and road signs.

3. Lack of quality control in microwave devices

Microwave devices are notorious for lack of quality control, especially leakage. At least 33% of microwave products, such as ovens or wireless communications devices, do not meet the Canada Safety 6 Code with limits for body currents by induction, or contact with energised metallic objects, or in terms of SAR, and microwave devices tend to deteriorate easily from wear and lack of maintenance.

Mobile phones and WiFi

Following the mechanistic discoveries of the 1990s involving EMFs causing DNA breaks and breaches of the BBB, along with epidemiological studies on brain tumour rates after extended use of a mobile phone, together with numerous other reputable studies, most scientists since 2007 have accepted that mobile phones are dangerous. The new question is the degree of danger. Experts are now calling for a moratorium on the use of mobiles.

Dr. Vini Khurana, a top Australian brain surgeon, after 14 months' research on over 100 studies, published a paper on the dangers of mobile phones, and concluded it by urging 'the Industry and Governments to **take immediate and decisive steps** to openly acknowledge and intervene in this situation'. Unless done now, before definitive studies are finished, it may be **too late to intervene meaningfully for today's children**.

In an important paper, *h.e.s.e.* 2008, *Why mobile phone masts can be more dangerous than the phones*, Dr Goldsworthy argues that handset radiation may be less damaging, since it is intermittent and the body can recover in-between, whereas **continuous irradiation** from masts, DECT base stations and WiFi routers **prevents adequate recovery time**. He outlines the body's negative feedback systems to mitigate damaging radiation and concludes that 'it would be advisable to call for a **moratorium** on the further expansion of these wireless 'services'' pending further research and safer devices.

On the Powerwatch website Lloyd Morgan highlights **six flaws in the 2nd Japanese Interphone study**, e.g. they studied only 2 glioma and 4 meningioma cases for cellphone use for 10+ years. Although the study concluded that 'No consistent increase was observed in the overall risk', actually, for the highest compared to the lowest cumulative maxSAR-hours (> 10, or > 1,000 hours of use), there was a **5.84-fold risk of glioma**, making the 'non-significant' description 'outrageous'. Morgan concludes that 'Because the study did find risks, it should result in a world-wide set of public health actions to substantially reduce the absorbed cellphone radiation. For example, the consistent use of a **wired headset** and **not allowing children to use cellphones**.'

The Powerwatch website also calls for 'considering **restriction** of mobile phone use when **pregnant**' to allow further investigation of variations in fetal and neonatal heart rate and cardiac output from 10 minutes' telephone-dialing exposure (Rezk, *Saudi Med.J.*, 2008).

Professor Hardell and Cindy Sage argue from health effects associated with EMFs, including childhood leukaemia, brain tumours, genotoxic effects, neurological effects and neurodegenerative diseases, immune system deregulation, allergic and inflammatory responses, breast cancer, miscarriage and some cardiovascular effects, for 4 changes:

1. new limits **near new or upgraded power lines** and for **new buildings**
2. a new limit for **children and/or pregnant women**
3. new limits for **outdoor** and **indoor cumulative RF exposure**
4. a new limit for **mobile phones** given the risk of brain tumours after 10 years. (*Biomed.Pharmacother*, 2008, from the Powerwatch website)

A study of 361 men at Cleveland, Ohio, linked **mobile phone use** and **decreased male fertility**, with the amount depending on the duration of use (*Fert. & Ster.*, 2008).

A German study by Lerchl A, *J.Pineal Res.* 2008, on hamsters showed a lasting **increase in body weight** after non-thermal 900 MHz exposure, suggesting metabolic changes.

Belyaev and Grigoriev, in a 2007 Russian review, argue that the **SAR concept alone is inadequate** for assessing **non-thermal microwave risks**. They note the problem of numerous overlapping sources of exposure, the need for research into epigenetic changes in stem cells and the different bioeffects of modulated and continuous waves.

The January 2008 **sleep study**, showing that cell phone radiation delayed delta stage or slow-wave sleep, is still being analysed. Delta rhythm sleep is important to endocrine function as well as the body's repair mechanisms, and poor sleep has been linked with obesity, increased blood sugar and insulin intolerance. A 2006 Lubeck study showed 0.75 Hz delta-rhythm stimulation via surface electrodes improved slow-wave sleep and memory consolidation. A 2007 Wisconsin study, using transcranial magnetic stimulation non-invasively, showed EFs and MFs have similar effects, triggering slow-waves.

Power Lines

The non-thermal health dangers of power-lines were first published in 1979. The IARC accepts they can cause cancers, but has yet to set appropriate limits, although WHO recommends that implementing very low cost precautionary procedures to reduce exposure is reasonable and warranted (Document No. 238, July 2007).

Three recent studies show how IARC limits appear inadequate because they do not consider **all the illnesses associated with living near power-lines**. Lowenthal, *IMJ* 2007, showed for **lymphoproliferative or myeloproliferative disorders** that adults living < 300m from power-lines at < 15 years of age had a x 3 risk, and at < 5 years a x 5 risk. Garcia et al., *IJE* 2008, a meta-analysis of 14 studies on **Alzheimer's**, showed 60% to x 2 risk for occupational ELF-EMF exposure, suggesting neurodegenerative diseases are relevant too. O'Carroll and Henshaw, *RA* 2008, a review of two 2002 epidemiological surveys by IARC and California DHS of cancers near power-lines, accept IARC's 2B classification based on evidence from **childhood leukaemia**, but argue that it should also include significant evidence for **adult leukaemia** and **brain cancer**.

The Powerwatch website reports that the **Scottish Parliament** Public Petitions Committee on 19th February again considered Petition PE812 of April 2005 urging 'the Scottish Executive to acknowledge the potential health hazards associated with long-term exposure to electromagnetic fields from high voltage transmission lines and to introduce as a matter of urgency effective planning regulations to protect public health'. Parallels were drawn with passive smoking, an 'unproven' cause of long term health effects where there is sufficient evidence for **pre-emptive legislation**. Nigel Don (SNP) commented that 'the risk is that governments and other organisations will wait until the evidence is totally overwhelming, when – possibly reluctantly – they are overwhelmed'.

In the late 1990s Hachulla identified an **unusual blood condition** in some of the people exposed to twin power lines in France which he called 'pseudo iron deficiency'. This is supported by a 2008 survey between January and March on the same power lines by the **French Centre for Research and Information on Independent Electromagnetic Radiation** (Criirem). It found **health problems** (sleep disturbance, memory, hearing headaches, irritability, depression) are significantly more frequent among nearby residents, along with 'illness' and cancer. Its final conclusions will be published in June. The French Secretary of State for Ecology, Nathalie Kosciusko-Morizet, admitted that the high voltage power lines are a 'problem for health'. She will propose a circular calling on prefects to regulate building permits below the high-voltage power lines. In an Oxford study of 2004 the risk of leukemia increased by 69% for children living < 200m from high voltage lines at birth and 23% for those living between 200 and 599m, compared to those born > 600m.

A study from Göttingen, *Bioelectromagnetics* 2008, shows that 1.2 μ T at 50 Hz EMFs **reduces the efficacy of Tamoxifen**, a common breast-cancer drug. There have been many similar studies. Tamoxifen resistance is the most common cause of breast cancer death. EMFs alter the expression of estrogen receptor cofactors in breast cancer cells.

Cricenti, A. et al., *J.Microsc.* 2008, showed 1 mT 50 Hz MF, 24 hours, changed functional groups in **human skin keratinocytes cells** in their biochemical properties and shapes.

A Chinese study, Wu, Y., *CEPP* 2008, showed that 25-day exposure of rats to 50 Hz ELF MF **impaired spatial recognition memory** of the novel arm in a Y-maze.

An online article by Cyril Smith, as chapter 2 of *Homeopathy – How It Works and How It Is Done*, explains some of the science underlying **chemical and electrical sensitivities** (Feb. 2008, *Journal Homeopathy 4 Everyone*, <http://www.hpathy.com/research/smith-how-homeopathy-works-2.asp>).

ES and governments

There are now worldwide concerns about health from radiation emitted by masts and power-lines. Alongside the growing number of calls for an immediate moratorium on further wireless deployment, the refusal of planners in some countries to consider reputable health research, but only aesthetics, is beginning to look decidedly outdated.

The **Canadian Human Rights Commission** approved a Policy on Environmental Sensitivities in 2007, **classifying EHS as an environmental sensitivity** and thus a disability [see p.3]. An editor in *The Canadian* commented in February, 'This is not only a public health issue; it is also an environmental and human rights issue that is being ignored by those in positions to help.'

On 14th March *Microwave News* reported that 'the Interphone saga gets weirder and weirder'. The 5th annual report by the Swedish Radiation Protection Authority (SSI), *Recent Research on EMF Health Risks*, **omitted** the three Interphone papers suggesting cell-phone **tumor risks**, but included the two others which showed no risk. Of the seven members of Sweden's SSI, five have strong ties to ICNIRP and 2 others are members of its standing committees. *Microwave News* concludes that 'it indicates a need for change'.

At the February meeting of the **Irish Doctors' Environmental Association**, according to the *Irish Times*, Dr Colin Blakemore stated that the **current ICNIRP health guidelines** are 'based on **outdated science** and do not take into account the new research'. The Association called on the government to 'immediately start research into the non-thermal effects of exposure to electromagnetic radiation'.

The *Economic Times* reports that **India** will soon unveil safety guidelines for base stations and mobile handsets. It is **likely to ban masts near schools, hospitals** and rooftops of large **residential buildings** 'because children and patients are more susceptible to electromagnetic fields'; children under 16 will be discouraged from using mobile phones. India has not adopted ICNIRP's guidelines. Makers opposed giving the specific absorption rate (SAR) in the handset screen menu, since it's 'in the user manual'.

In January Dr Carlos Sosa wrote to Mr Mukasey, US Attorney General, urging legal action against the former director of the WHO EMF Project for **crimes against humanity**.

The *National Post* reported on 31st January that **Environment Canada** ordered its scientists to refer all media queries to Ottawa where communications officers will help them respond with '**approved lines**'. Climatologist Andrew Weaver of the University of Victoria said, 'They've been muzzled. They are manufacturing the message of science.'

On 3rd March *The Register* reported that Ofcom is appealing to the High Court to stop access to a list of every mobile phone mast in the UK on Sitefinder, established following the Stewart Report. Ofcom, the telco regulator, is appealing against the Information Tribunal Commissioner's 2007 decision upholding a Freedom of Information request. After three months of 'constructive discussions' the mobile operators, excluding T-Mobile

which has apparently not provided any cell information since August 2005, have agreed to provide one last package of data. On 9th April the *mbmagazine* reported that Ofcom admitted it received over £10M for running costs in 2006-07 from O2, 3, Vodafone, Orange, T-Mobile and Virgin Mobile. Under the Communications Act 2003, 3(1) 'It shall be the principal duty of Ofcom, in carrying out their functions; (a) to further the interests of citizens in relation to communications matters; and (b) to further the interests of consumers in relevant markets, where appropriate by promoting competition.'

This Newsletter reported in February a study by Dr Oberfeld showing **increased cancer near a transmitter mast** at Hausmannstaetten, Austria. The increased risk for all cancers was x 8, with breast cancer and brain tumour especially prevalent. Recently the legal counsel of mobilkom austria AG has apparently served Dr Oberfeld with a demand to **retract the conducted investigations** and at the same time has threatened to take legal action for damages in the case of non-compliance. Dr Oberfeld had been commissioned by the provincial government of Styria to research the high cancer incidence around the former mast. He was apparently told by the Federal Ministry of Transport, Innovation and Technology (BMVIT) that, to their knowledge, data for networks which are not in operation any more are deleted and therefore unavailable from the BMVIT. Apparently mobilkom austria AG now alleges that during the period concerned the transmitter was **non-existent**, although Dr Oberfeld claims he collected details of power and frequencies from an employee who worked at the transmitter and neighbours noticed such a transmitter from 1984 to 1997, the years in question.

In February Exradia Ltd reported that 83% of 4,400 people from the UK, Germany, France and Spain were **concerned about the health dangers of mobiles**, a 10% increase since the EU Reflex study of 2004. Over 90% thought their government was not doing enough to warn parents about the risks to children from mobile phone usage.

On 4th April the *Parisien* reported that the **French National Library** in Paris has **abandoned its planned WiFi system**. Three reasons were given: the quality and speed of the service, and the precautionary principle, to avoid exposing staff and visitors to microwave radiation. The decision was justified by the scientific literature which proves the genotoxic effects from WiFi waves, especially Professor Lee's research at Chicago University showing alterations to human cells exposed to 2.45 GHz, the WiFi frequency, and the international BioInitiative Report. There is already a **moratorium in public libraries** in Paris after staff suffered ES symptoms. Genevieve Library staff are asking for the disconnection of WiFi terminals and the Health and Safety Committee of the **Censier-Sorbonne University** in Paris has decided to **disconnect a WiFi hot-spot**.

According to *The Press Democrat* of 24th March, the **Sebastopol City Council** in California voted 4-0 to **rescind an agreement** of November 2007 with Sonic.net that would have allowed a free WiFi network in the city centre. The mayor, Craig Litwin, thanked Sonic but said citizens had voiced health concerns. Sonic CEO Dane Jasper said his company is sympathetic to those who blame radiofrequency signals for their health problems but maintained that the exposure from a WiFi network would be 'a drop in the bucket' compared to what people receive daily from TV, radio and cellular phone signals.

Norway's Environmental Safety Association, (NMF) has reported the council of **Stavanger** to the police for breaking the planning and building law by introducing a wireless network in the town centre with 12 base-stations without making plans public first. Sissel Halmøy, field manager for EMF, NMF, said: 'People's health problems have not been taken into account at all. People are subject to the wireless network without the opportunity to protect themselves. We see a police report as the only possibility to state our case and to protect those who require it.' In the **police report**, NMF refers to the BioInitiative Report, the work of world-leading scientists and researchers who have dealt with over 2000 scientific reports on EMFs and health. As of 12th March the police report was not yet registered. In **Trondheim** people **complained of health problems** after

the wireless network was introduced in autumn 2006, but the NRPA took no action after a concern report from the county doctor in South-Trøndelag.

In **Italy** the Catanzaro Against Electrosmog committee reported that the district attorney of Paola has adjourned the trial due for 13th March of a telephone company's managers for **5 deaths from the same family** living near one of the company's buildings.

In March the city-councillor Rupert Read said that 'the Green Party in Norwich has called for a **complete moratorium on new mast-building** in the area as the current network coverage is thorough. Greater investigation is needed into the studies that have shown a possible link between masts and the occurrence of illnesses such as cancer in surrounding areas. We would like to see the current planning rules strengthened to give councils complete power over where any masts are sited and to allow councils to consider the possible health effects of masts to residents when determining applications.'

Pasadena, California, has a **moratorium on cell tower construction** in residential areas, April 2007 to June 2008. The Deputy City Attorney Javan Rad said 'We need to come up with an ordinance that allows us to regulate to the furthest extent considering that Congress and state law has limited the city's regulatory power in this area.'

In **Guernsey** the director-general of the Office of Utility Regulation said, 'We are aware of the concerns about emissions generally from mobile phone masts. And we will soon be starting a review and **audit of the emissions** of every mobile phone mast in Guernsey.'

In February Zarzaquemada residents in **Leganés, Spain**, demanded 'the immediate suspension of mobile phone relay antennas' in urban areas until there is research to show that they are harmless. This was after **10 cancer cases** in the same building.

New Denver (population about 600) in British Columbia, Canada, has voted (117 to 110) **against the introduction of a mobile phone service** in a referendum in January. Some citizens are worried by the health hazards, others want to market the area as a tranquil cell-free sanctuary and others are angry at Telus for not following their wishes.

In **Augusta, Georgia, USA**, officials have **banned phone masts** altogether in most residential areas but raised the mast height limit to 350 feet in some rural parts.

The **Sarasota** County Commission voted down 4-0 an exception request for a 153 foot cell phone tower despite a 5-4 approval by the Planning Commission. Commissioner Mercier said he objected to its 'height and its orientation, relative to the neighbourhood'.

In March it was reported that parents and teachers who want a mobile phone mast, disguised as a palm tree, removed from beside **Dubai British School in The Springs** hope to do so if the phone company is provided with a suitable alternative by the property developer. One concerned parent started an online petition to remove the mast, and thousands of people signed up within a week. 'Studies have shown significant health effects on people living within 300 metres of mobile phone base stations.'

In **Lyon, France**, the city agreed in February to adopt the precautionary principle and **remove the phone mast** in the Victor-Hugo elementary school and **stop phone masts** in three other schools during lessons. The school recently had two illnesses, leukaemia and lymphoma, in children about 10 years old in a classroom on the 2nd floor close to the base station and an electrical cabinet on a roof terrace. Parents demanded that the base station be removed and not just turned off. They also wanted to lower the threshold to 0.6 V/m, with independent and continuous measurements.

In February, according to the Associated Press, the U.S. Court of Appeals for the District of **Columbia** Circuit said the Federal Communications Commission violated government

rules by approving 6,000 cell, radio and TV towers on the Gulf Coast, killing 4-50M migratory birds annually, and required the FCC to conduct an **environmental analysis**.

The ***Santa Cruz Sentinel*** reported in March that the county Planning Department, urged by the Board of Supervisors, is tightening rules for masts by minimising 'visual impact', although some acknowledge health concerns are the driving force. The amendments, if approved, would require a 300-foot buffer between wireless towers and schools, limit three towers to any given site and allow rooftop antennas to be subject to aesthetic concerns. 'It's like discussing how elegant cigarettes look,' said Marilyn Garrett.

In **Meath**, Eire, a councillor has called on the Irish government to force EirGrid to suspend all work on the preferred route for high-power electricity cables pending a full public inquiry. He said that the **full implications for health and safety** should be known and that the government had a responsibility to 'protect people in their houses from EirGrid'. He also accused the government of 'dragging its feet' on transposing into Irish law an EU directive, signed in April 2004, on the health and safety requirements for workers' exposure to the risks of physical agents (electromagnetic fields).

In New South Wales, **Australia**, an extra 750-metre stretch of new high-voltage power-lines will be **put underground**, near Wamberal school, after strong reaction from local residents. Dr Kaye, the Greens MP, said it was 'an admission by Energy Australia that there are severe health risks associated with exposing young people to EMR'.

The BioInitiative Report: '**The existing public safety standards limiting radiation levels in nearly every country of the world look to be thousands of times too lenient. Changes are needed.**'

ES and new legislation

The Corporate Manslaughter and Corporate Homicide Act 2007 became effective on 6th April 2008. It concerns a gross breach of a relevant duty of care by senior management in the way that an organisation's activities are managed or organised, leading to death.

Some questions may be worth consideration even if the organisation or government department (crown immunity ceases) operates within government 'guidelines approved by official scientific advice'. The advice that 'guidance from regulatory authorities may be helpful to a jury when considering the extent of any failures to comply with health and safety legislation and whether the organisation's conduct has fallen far below what could reasonably have been expected' may suggest that employers should be expected to be aware of guidance from sources additional to government departments, where the government advice is inadequate or irrelevant.

1. If a government department chooses to ignore reputable scientific evidence, such as that in the BioInitiative Report, which shows the potentially fatal health dangers of EMFs to employees, how far is that department or the government itself now liable for failing to show the relevant duty of care which 'could reasonably have been expected'?
2. What is the situation if the government has no limit on sub-thermal dangers, but only thermal limits following ICNIRP, since ICNIRP's limits are admitted to be only thermal limits? Scientists argue that some EMF fatalities derive from low-level EMF exposure at sub-thermal levels, but that the 2007 2-year HPA enquiry into WiFi is simply to compare sub-thermal exposure with ICNIRP thermal limits.
3. In the absence of appropriate government sub-thermal limits, how far should employers be 'reasonably' expected to follow the BioInitiative report of 2007 which provides an international scientific assessment with suggested sub-thermal limits?

4. If an employer prohibits an employee from using a mobile phone during work hours to avoid increased risks of fatal brain tumours, should employers also prohibit passive irradiation from other people's phones? Current legislation requires the removal of passive smoking from inside the workplace.

5. In the case of institutions dealing with children, such as schools and public facilities like libraries and leisure centres, if the government issues precautionary advice with regard to children's use of mobile phones but the institution does not implement it or a policy among its employees to protect children from passive irradiation, is any employer responsible for the institution's failure in its duty of care towards the children?

6. How much 'proof' of harm is required? With regard to smoking, it is said that the precise mechanism linking smoking and cancer has as much evidence or less as that between EMFs and cancer. IARC has classified ELF EMFs as possible human carcinogens, and WHO recommends that ELF precautionary procedures are reasonable and warranted.

ES and the media

At last many people are talking about the dangers of EM radiation. Action, however, is needed. I overheard a parent trying to persuade his son to adopt the government's precautionary approach and not to use a mobile phone, but neither parent nor child found it easy.

The *Daily Mail* of 19th February had an article entitled *After cancer warnings on mobiles, could your home phone be putting your health in danger?* A recent survey by the Dutch Electrohypersensitivity Foundation found that **digitally enhanced cordless telephones - Dects** - are the main source of radiation in homes that have them. The researchers claimed that they frequently cause **health problems** - headaches, fatigue, heart palpitations and concentration and sleep problems. Professor Hardell, who included cordless phones in his mobile studies, suggests that habitual users have a x 3 risk of acoustic neuroma (a benign tumour between the ear and brain) and a x 4 risk of a malignant brain tumour. As the German Federal Agency for Radiation Protection has warned, Dect devices 'have no control to regulate power output according to the power needed'. There are now digital cordless phones that do not emit microwaves when on standby, but the UK's HPA apparently said that 'it's an international industry standard and we can't regulate', although asserting that the health risks from a Dect base station 'are no greater than from a mobile mast'.

The *Daily Mail* of 4th March had a lengthy article, *We love our mobiles... but are we being told all the facts about how safe they are?* examining the way **the UK government refuses to give sufficient warnings about the dangers of non-thermal radiation**, in contrast to some other countries. It reported Professor Henshaw as saying: 'We are steeped in denial over the safety of mobile phones and related technologies.' These 'non-thermal' effects were considered in the 2000 report on mobile phone safety by Sir William Stewart, but the report by the Mobile Telecommunications and Health Research programme last September concluded that there was 'no need to support further work in this area'. This is in contrast to the Benevento scientists in 2006, the 2007 BioInitiative review, and the Irish Doctors Environmental Association. Dr Andrew Goldsworthy was quoted as saying 'There is absolutely no doubt these effects exist', and Professor Henshaw said that the idea that microwaves don't affect our health is 'a total red herring. The real question is: Why should anybody who understands physics and biology be surprised that low level radiation has an effect on health?' 'We need to start thinking about microwave radiation the way we think about atmospheric pollution caused by cars.'

The *Daily Telegraph* on 19th February reported research in Israel that 'people who use a mobile phone for hours a day are 50 per cent more likely to develop **mouth cancer** than those who do not talk on them at all'. The study of 500 patients also suggested that

mobile users in **rural areas** may be at an increased risk because handsets need to emit more radiation to locate fewer antennas. The study is apparently regarded as significant because the Israeli population were early and heavy users of mobile phone technology.

The excellent but worrying review of electrosmog, especially WiFi, published in the *Ecologist* in December 2007 is now available online: '**The gathering brainstorm**. *It is unregulated, untested, more dangerous than its proponents would have you believe — and soon to become even more powerful.* Mark Anslow reports on the inexorable march of WiFi.' WiFi appeared without having to undergo any safety tests whatsoever, unlike new drugs. Concerns were first raised about the health effects of WiFi by BECTA in 2000. http://www.theecologist.org/archive_detail.asp?open=y&content_id=1179#33598

The *Independent on Sunday* of 30th March 2008 reported the **warning of the top brain expert, Professor Khurana**, of a huge rise in tumours and his call on industry to take immediate steps to reduce radiation. The Mobile Operators Association reacted by dismissing the study as 'selective' and 'by one individual', reaching 'opposite conclusions to the WHO'. In the online *IoS* paper, this article apparently had the most hits that day. *foodconsumer.org* reported it in under the heading 'Mobile phones riskier than smoking'; 3 billion people worldwide use mobiles; 1 billion smoke; smoking kills 5M a year.

The popular **BBC's** website has **removed complementary medicine** from its Health section. There had been 40 pages on all the major therapies, their pros and cons, evidence for their effectiveness, and how to find a qualified practitioner. Homeopaths now have a 'Homeopathy Worked for Me' campaign.

The Channel 4 programme, *Allergic to the 21st Century*, was due to be repeated on Channel 4 on 15th April 2008 at 3.35 am and may appear on More4 at a later date.

EMFs and the Canadian economy

One aspect of EMF environmental pollution reported by **Dr Andrew Michrowski** (*Whole Life Expo*, Toronto, November 2007) is the **economic cost of corrosion problems** in Canadian building structures, pipelines and fluid containers, which have increased significantly over the last few decades. Whereas in the 1970s there were only a few specialised corrosion engineers, now 25% of engineers in North America are corrosion experts. In denser microwaves, sewer and telephone manhole covers apparently powder away, rather than oxidise, and fire hydrants crumble after 6 months. The Federation of Canadian Municipalities has asked the federal government for \$123 Billion within 5 years to avoid building collapses due to corrosion. Most corrosion is induced by net currents in the Canadian electricity supply. This is also affected by computers and wireless systems when RF/MW penetrate the system's ground via neutral wires in many populated areas.

ES-UK - the new website - www.es-uk.info

For those able to access it, more information has been added to the ES-UK website in recent weeks – many thanks to Graham and others. Do keep looking and contributing.

In particular there is a 4-page list of scientific articles to do with ES, in case anyone wants to convince those unaware of all the research which has already been done. If you would like a paper copy, assembled by Sandi Lawrence, please write to the editor below.

Do you know?

- Susan Parsons has written a useful 21-page document called ***Living with EHS: A Survival Guide*** (*WEEP: The Canadian Initiative to stop Wireless, Electric and Electromagnetic Pollution*, <http://www.weepinitiative.org/index.html>).
- D-LAN (direct Local Area Network) plugs send your broadband internet signal from a router via your electricity ring-main to any number of computers, without the need for a wireless router. In fact they are usually faster and more secure than wireless!
- Can anyone tell us where this station is, or even supply a photograph?
On a remote railway station in Wales there is an old advert, dating from the 1930's, for vacuum cleaners. Beside a picture of a happily hovering housewife it says: "Don't let hard work kill your wife - let electricity do it!"

ES - please help to raise awareness

Sandi Lawrence is in contact with many who have ES and is keen that we should all do as much as we can to help all those suffering.

ES-UK will try to raise awareness of your condition as best it can, but it takes many voices to make an impact and people power gets results. All those who have ES/EHS have had to struggle through and find their own ways to deal with this 'functional impairment due to environmental triggers', as Professor Olle Johansson so aptly described this condition.

In the same way, it is down to us to raise awareness and try to help ourselves. Please try to write to your MP and/or doctor (or ask family or friends to write if you can't) and raise awareness if and when you can. We have the knowledge of what these technologies can do, we have a warning and can try to avoid them, but many innocent non-sensitive people don't. Children and animal life can't speak out or ask for help so if we care about them, shouldn't we?

Please send contributions for the ES-UK Newsletter to:

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