

## 'Psychological denial' of mobile health risks



Dr Devra Davis, the epidemiologist and environmental hazard expert, is calling for an independent evaluation of the dangers of mobile radiation.

Dr Davis told Tucker Carlson on Fox TV: 'We've been in denial, and the denial is in large part psychological.' Regulators must come to terms with the 'very inconvenient truth', including the cancer risk.



(Yael Halon: "Cell phone radiation expert says FCC 'in denial' of health risks, demands full, independent investigation" Fox News, 28.12.21)

**A 'cease and desist' notice for a phone mast causing ES symptoms was approved by the Board of Health at Pittsfield, USA, on February 2 2022.**

(EHT, February 3 2022) See page 31.

## UK needs scientific limits below NOAEL

UKHSA PHE /Ofcom / ICNIRP and WHO are still denying the science. Their limits are still unprotective They need to adopt non-thermal RFR limits below the No-Observed-Adverse-Effect-Level (NOAEL) to comply with the Health & Safety At Work 1974 and Equality 2010 Acts.

Non-thermal RFR, used by mobile phones, smart meters, Bluetooth and Wifi, causes ES and was classified as a 2B cancer agent in 2011. The FDA/NTP's \$30 million study in 2018 found 'clear evidence' that mobiles cause cancer.

This issue is not ignorance. Electrosensitivity has been known since 1733.

**A live provocation study, the first on health harm from actual 5G, showed 5G causes ES symptoms.**

(Hardell L et al., *Medicinsk Access*, February 2022) See page 18.

### Radio Frequency Radiation Guidelines

	Background level	Non-thermal and Thermal, Long-, short- term 4 - 24 hours. Peak			Thermal only, Short- term only 6 - 30 minutes. Averaged		
	Safe	Scientific, Protective			Arbitrary, Unscientific, Unprotective		
	Johansson et al.	USSR	Bioinitiative	EUROPAEM, IGNIR	USA Schwan	USA, ICNIRP	UK: ICNIRP
	1997	1935	2012	2016, 2018	1953	1982, 1998	2020
V/m	~ 0.0000002	6	0.04 - 0.05	≤ 0.002 - 0.2	194	61	≤ 123
dbm	< -90	-1	-46 to -43	≤ -70 to -31	+ 29	+ 19	≤ + 25
uW/m <sup>2</sup>	~ 0.0000000001	100,000	3 - 6	1 - 100	100,000,000	10,000,000	≤ 40,000,000

### Are your nerves like fibre-optic cables?



Photons bounce along fibre-optic internet cables. Nerves have photons. Could the myelin sheath act like a fibre-optic cable, adding fast photon signals to electrically charged ions?

(Zangari A et al.: "Node of Ranvier as an Array of Bio-Nanoantennas for Infrared Communication in Nerve Tissue" *Sci Rep.*, 2018;

Zangari A et al.: "Photons detected in the active nerve by photographic technique" *Sci Rep.*, 2021).



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## Thank you for your stories – time for more

Thank you to those who wrote about their experiences of living with EHS. More are welcome. Please email by May 1<sup>st</sup> to the Editor or send to the BM Box (up to 1,000 words or three sides; photos help) on (a) your personal experiences of ES, (b) the difficulties you have met, and (c) your successes, if any, and whether you've lost your home and job or had to move.

## Thank you for writing

Thanks to those who write letters and emails. They make a difference. They inform MPs, local councillors and people in the media and government about the harmful radiation from masts, mobiles, Wifi, Bluetooth or smart meters.

## Thank you for your gifts

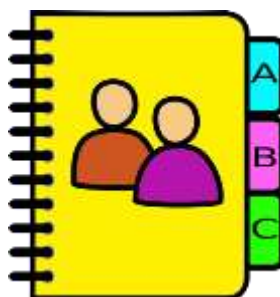
Your gifts support our website, telephone helpline, mail box, leaflets and media information.

## Janet Gladwell

We are most grateful for the generous legacy to ES-UK under the will of the late Miss Janet Gladwell of Epsom, a long-time supporter of the charity. Trustees have established an investment fund to help maintain the ongoing work of the charity in addition to the essential regular giving. Both contribute to furthering the charity's two aims, of helping those suffering ES and informing others of the condition and related matters.

## Updated ES Directory

Many thanks to the team who maintain and update the ES Directory. The new edition, Autumn 2021, is available on the ES-UK website under Resources. It is an independent source about products and services for people with ES. Any recommendations or comments should be sent to the email address on the Directory. There are two notes at the front.



**(a) Sensitivity to LEDs** “The latest on the halogen lightbulb ban: There is an EXEMPTION in the regulations, for old-style non-LED bulbs to be available to people who are LED-sensitive on prescription. The Ecodesign for Energy-Related Products and Energy Information (Lighting Products) Regulations 2021: SI 2021 no.1095, schedule 4, para 3 (2)(p) reads: "light sources provided specifically for use by photosensitive patients, to be sold in pharmacies and other authorised selling points (such as suppliers of disability products), upon presentation of a medical prescription".

## **(b) The need for high standards in the sale of products and services for people with ES**

“People with ES deserve to be treated fairly and with respect. If the directory team become aware via the representatives of relevant charities or support groups of two or more serious complaints from separate individuals about the products, services or standard of customer service provided by a supplier listed here, their entry will be marked with a question mark (?). This will apply to products and services supplied from 1 January 2022.”

*UK Government website:*

**“Accepting returns and giving refunds: the law. Online, mail and phone order sales:**

*Online, mail and telephone order customers have the right to cancel their order for a*

*limited time even if the goods are not faulty. Sales of this kind are known as ‘distance selling’. You must offer a refund to customers if they’ve told you within 14 days of receiving their goods that they want to cancel. They have another 14 days to return the goods once they’ve told you. You must refund the customer within 14 days of receiving the goods back. They do not have to provide a reason.”*

## Dawn Voice-Cooper 1945-2021

*Excerpts from a tribute by Julia and Dave:*

Members of the UK Electrosensitives Facebook group would like to express their deep sadness for the loss of Dawn, a much-loved member. Dawn brightened up our group. She was wonderful, selfless and endearing, with a warm heart and an amazing sense of humour. She always had a way of cheering everybody up, despite suffering so much herself with several conditions, including EHS. She tried to educate people about the dangers of wireless radiation. There were estate agents, taxi drivers, MPs, shop workers and random members of the public, who all heard her words of wisdom. Even during her final few hours she educated a couple of people about the dangers of 5G and she encouraged them to take on the Stop 5G fight, once she had passed. We know that these people have vowed to carry out her wishes.



We said farewell to Dawn in October 2021, shortly before she travelled to Switzerland where she spent the last few days of her life.

Some people might think that Dawn was the mild-mannered type. She was actually incredibly bold. She made it her duty to campaign for a better world.

She asked that we share the following: "It's no good just sitting there complaining about the situation that we're all in. You have to get up and take action. You've got to Fight the Good Fight". With Dawn in our thoughts, this is what we intend to do

## UK NEWS

### Fibre replacing copper landlines: power cuts without battery back-up

The Autumn 2021 Newsletter (p.7) explained how copper landlines will be replaced by fibre optic cables by 2026. Fibre allows Voice over Internet Protocol (VOIP). Old landline phone handsets will still work after the network changes, but you may have to plug your phone into your internet router or a new wall socket. Most people will keep their phone number.

However, fibre optic cables require a powered junction box on entering a house. During power cuts official advice for emergencies is to use a mobile phone which has its own battery, but 0.5 million people in the UK do not have a mobile phone.

The power cuts in Scotland and the north of England during December 2021 showed that without mains electricity or emergency batteries households can be stranded. Ofcom says that telecoms must ensure all households have access to the emergency services. The idea was that telecom firms should provide customers without a mobile phone with a free battery pack for the internet fibre junction box to provide 24 hours of standby and one hour of talk time.

A letter in the Times on December 28 2021 ('Our lost landlines') highlighted the problem of



emergency access. Patrick Farrelly of Saunton, Devon, experienced the complete failure of the VOIP system during a power cut. "During a number of conversations with BT it was suggested that I buy a mobile phone; we have a signal here but that advice is no use to anyone living in an area with poor or no mobile reception. After complaining I was promised a free BT battery back-up unit that would allow my hub to continue to work during a power cut. Sadly BT appears to have run out of stock of these units and is unable or unwilling to suggest a third-party alternative, other than to advise that such an option may not be compatible with the hub. This switchover has not been properly thought through."

### Government abandons ban on mobiles in school

Gavin Williamson, the former education secretary, called phones in the classroom 'distracting' and 'damaging' and proposed a ban in summer 2021, a move backed by Children's Commissioner Dame Rachel de Souza.

However, revised guidance issued on February 2 2022 by the Department for Education has made school heads responsible.

(Stuart Carr: "Government drops plans to make schools mobile-free zones and say 'headteachers are best placed to decide on whether to allow phones in classrooms'" Daily Mail, February 3 2022)

## Allergic reaction to virtual reality headset

Lewis Gray, 13, from Chertsey, Surrey, was rushed to hospital after an allergic reaction to the Facebook virtual reality headset, Oculus Quest 2, which he was given for Christmas. The day after he first used it, his mother, Kirsty Reed, noticed the skin around his eyes and forehead starting to go red. He was taken to hospital when his eyes started to swell shut and doctors said it was an allergic reaction.



A recall alert showed Facebook received 5,716 reports of facial skin irritation following use of the kit, with reactions including rashes, swelling, burning, itching, hives, and bumps. They also received 45 reports of consumers requiring medical attention.

His mother said: 'When he woke up on Boxing Day morning there was irritation along his cheekbones and on his forehead. The next morning his eyes were nearly shut with the swelling.' The doctor at the urgent treatment centre suggested it was likely a delayed allergic reaction to the headset.

The Oculus Quest 2 was temporarily recalled in July 2021. Facebook started receiving reports of skin irritation in December 2020 and started an investigation. An update in April said that they had 'identified a few trace substances that are normally present in the manufacturing process which could contribute to skin discomfort' adding that, even though these were below industry standard, they had 'changed [their] process to reduce them even further.'

But, in July 2021, the Oculus website stated that: 'We've received reports that a very small percentage (0.01%) of Quest 2 customers were experiencing skin irritation after using the Quest 2 removable foam facial interface.' They also then offered a free silicone cover to headset owners to protect their skin, and said that all new units would include one from August 24 2021. Lewis' device came with a silicone cover but not fitted. Kirsty said there was no indication

as to why it was there and so she did not use it. While there were warnings included for epilepsy and that the product wasn't suitable for children under 13, Kirsty couldn't see anything mentioning potential skin irritation.



*[Radiofrequency radiation and EMFs can cause similar skin rashes and irritation, sometimes delayed, so the problem may not be chemicals in the cover but the RFR and EMFs - Ed.]*

(Mark Tovey: "Boy, 13, is rushed to hospital after his eyes swelled SHUT when he suffered an allergic reaction to Facebook's £299 Oculus Quest 2 virtual reality headset he got as a Christmas present" Daily Mail, December 29 2021)

## READER'S COMMENT:

*'I suffer from exactly the same eye symptoms and rash when around EMF's even for a short time. Modern mobiles seem to penetrate deep into my eyes causing horrendous pain & swelling. I don't even have to see it. A few minutes in a room with one is enough.'*

## TikTok tics in teenage girls

Tics are more common in young boys than in teenage girls. During the pandemic teen girls around the world started reporting the sudden onset of uncontrollable physical and verbal tics, somewhat like those in Tourette syndrome. Previously the sudden onset of unexplained tics accounted for only about 1% of total tic disorder cases but they now account for up to 35% of cases with exactly the same phrases and uncontrolled movements, tics specific to a few content creators on TikTok by individuals with real Tourette syndrome. This imitation Tourette syndrome appears to be brought on by stress and anxiety worsened by the pandemic and increased social media use. Teens prone to depression and anxiety are most likely to develop this condition, which may explain the rise in tics in teen girls rather than boys.

*[Some people with Tourette's, sometimes linked with demyelination, report that RFR/EMF exposure can cause tics, just as RFR/EMF exposure from mobile phones can cause depression and anxiety - Ed.]*

(Mohammed Aldosari: "Is TikTok Causing Tics in Teen Girls? What Parents Need to Know" Health Essentials, November 10 2021)

## Fitbit EMF Radiation Linked to Skin Ailments

“There have been numerous rising complaints from Fitbit users about developing a skin rash within weeks of using the device. This isn't a coincidence since one of the most common symptoms of EHS is skin irritation.



In 2014, the Fitbit Force was recalled by the company after thousands of complaints from users that the device was causing rashes and other skin irritations. The company, however, attributed this to them being allergic to an alloy that was used in making the band, an assertion that the affected users strongly refuted. Many of them also reported experiencing deep tissue pain, which only started after they began using the gadget.

What was even more surprising was that similar complaints continue to be reported even with new versions of Fitbit being released. It is unlikely that the company would continue to manufacture devices using the same irritants that were responsible for the widespread allergic reactions that plagued their customers. A more plausible explanation is that something else altogether is responsible for the skin injuries Fitbit users sustained.”

(Nicole: “7 Things You Need to Know About Fitbit EMF Radiation (2021)” Educate EMF, August 3 2021)

## ES symptoms from computers

“The electric field intensities in desktop monitors and laptops were 0.26–1.2 and 0.28–0.87 volts/m, respectively, which is higher than the standard levels. The results from the public health questionnaire revealed that 39% of computer users had some problems in general health status. A significant difference was observed between the general health of the two groups. Headaches, lack of sleep, and fatigue were also more common among computer users in the exposed group than the control group. ... As a result of this increase in the time of using electronic equipment, their health will be at risk.”

(Dehaghi BF et al.: “Exposure to electromagnetic fields and users' health” Int Arch Health Sci., 2021)

## Beware Apple AirTags tracking your location

Apple AirTags are button-sized devices which can attach to almost anything via a key ring. Iphone users and Android via an app can track a

tag's location using Bluetooth. Therefore AirTags can be used to track people unsuspectingly, if slipped into a purse, suitcase or a car, compromising privacy and safety.



Car thieves locate and steal vehicles by placing AirTags in out-of-sight areas of the vehicle when parked in a public place and later steal them from the driveway. They can also track and stalk people if AirTags are planted amongst their possessions. They show a location within a half a block radius while a person is on a bike ride and an exact address when at home.

(Christy Somos: “Yes, you can be tracked by Apple's AirTags: What you need to know” CTV News.ca January 5 2022)



## Bluetooth 2B radiation: Tile Slim and Tile Mate

Tile Slim is as thin as two credit cards and fits into a wallet or purse. Tile Mate has a hole to attach to keys or a bag. Both use Bluetooth 2B cancer radiation.

(Anon.: “5 things you didn't know you could do with a Tile” Pocket-lint Promotion, November 25 2016)



## Avoid HP Printers with Wifi always on

The HP DeskJet 2700e Series Reference Guide 2021 states: ‘Wireless button/light indicates wireless connection status. Blinks when printer is disconnected.’

The User Guide 2021 p.30 and p.24 states: ‘To change from a wireless connection to a USB connection: Connect the printer and the computer with a USB cable.’ ‘To turn Wi-Fi Direct on or off from the control panel: press and hold the Wireless button and the Resume button together for three seconds.’

These statements are wrong and/or misleading, the Editor reports based on experience in March 2022. Even when the Wifi is ‘disconnected’ with the blue light off and no Wi-Fi Direct icon on the printer display, and the computer Network settings show that the Wifi WLAN Wireless 802.11 transmitter is switched off, in fact the printer is still transmitting Wifi at over 6.0 V/m – the highest level the meter could read, even with



a USB cable fitted. An HP expert tried every setting, but admitted that the Wifi WLAN 802.11 and the Wi-Fi Direct are on a toggle switch: switching one off switches the other on.

The cheapest wired HP printer without constant Wifi is the Jet Pro 90198 at over £259.

The Cartridge People recommended a Canon Pixma TR4550 which switches off the Wifi when the USB cable is connected. It produces only a very short 0.05 V/m pulse when switched on.

### House phones: reduce the 2B radiation

A DECT cordless phone, which does not emit radiation while in standby on its base, is the Gigaset ECO DECT PLUS, E290 or E290A with answerphone. It also has adaptive power technology, reducing the radiation during use. Even better, use a wired landline if you can.



### Giving up smart phones

Dulcie Cowling, 36, decided at the end of 2021 that getting rid of her smart phone would improve her mental health. One pivotal moment was at the park with her two boys: "I was on my mobile at a playground with the kids and I looked up and every single parent - there was up to 20 - were looking at their phones, just scrolling away. Everyone is missing out on real life."

Ms Cowling, a creative director at London-based advertising agency Hell Yeah!, said: "I thought about how much of my life is spent looking at the phone and what else could I do." She plans to use the time gained from quitting her smartphone to read and sleep more.

Alex Dunedin, an educational researcher and technology expert in Scotland, binned his smartphone in 2020. "Culturally we have become addicted to these tools. They are blunting cognition and impeding productivity. We are wasting exponential amounts of energy producing exponential amounts of CO2 emissions. It has improved my life. My thoughts are freed up from constantly being cognitively connected to a machine that I need to feed with energy and money. I think that the danger of technologies is that they are emptying our lives."

He has become happier and more productive since he stopped using a smartphone, he says. He is only electronically contactable via emails to his home computer.

(Suzanne Bearne: "The people deciding to ditch their smartphones" BBC News, January 24 2022; Adam Weiss: "Turning off my phone improved my science" Nature, February 15 2022)

### Novak Djokovic:

#### mobile phone radiation weakens muscles

The 'favourite party trick' of the tennis player Novak Djokovic, according to his book, Serve to Win, is as follows:

"Get someone in the room to put their right arm out and their left arm on their belly and test their strength. Then have them hold a cell phone against their stomach and test them again. The radiation from the cell phone causes the body to react negatively and weakens the arm's resistance, just as a food you're intolerant to will.

It is an eye-opening revelation – and will make you think twice about carrying your cell phone in your pants pocket."



Novak Djoković at Wimbledon 2019 (Wikipedia)  
(Matthew Syed: "What Djokovic revealed to me at lunch" The Times, February 16 2022)

### Neurological research funding: MS, ME and EHS

The multiple sclerosis MS Society allocated £1.3m to research in 2019. In the UK the research funding for MS, with 100,000 patients, is 20 times the funding into ME/CFS, with 250,000 patients, according to the charity Action for ME. The Medical Research Council and the National Institute for Health Research (NIHR) contributed £3.2m to research into ME/CFS in 2020 to search for genetic markers.

In 2018 £2.5 bn was spent in the UK on health research, with £850m more on health-relevant research. Neurological expenditure was 9.7%.

Although the number of people in the UK severely disabled by EHS is estimated as 800,000, there does not appear to be any research on EHS being funded in the UK at present.

("UK Health Research Analysis, 2018" UK Clinical Research Collaboration, Medical Research Council, 2020; Francesca Steele: "Could this scientist have the answer to long Covid?" The Times, January 12 2022)

## 'Canary in a Gold Mine' show

From the show advert: Locked down during COVID and desperate to make theatre, Piti Theatre's Jonathan Mirin turns the camera on . . . himself, telling the story of the mysterious symptoms his life and production partner Godeliève began experiencing a decade ago. Increasingly unable to leave the house and take care of their new baby, the couple contends with the growing likelihood that her illness is environmental – and inescapable. Godeliève's severe neurological symptoms are triggered by exposure to the wireless radiation that the rest of society is passionately embracing to connect devices and upload cat videos. As her electro-hypersensitivity (EHS), (a.k.a. "microwave sickness.") worsened, Mirin found himself compelled to become a public health advocate, activist & petitioner in a landmark legal case against the FCC. The result: a show that's a 21st century love letter as well as a wakeup call to the risks of 24/7 wireless exposure.

KoFest Artistic Director Sabrina Hamilton says, "At first I was worried that this might be an earnest public health lecture, but I've been watching the daily footage, and it's really entertaining, with wonderfully inventive camera work. Anyone who has experienced chronic illness themselves or helped a loved one in crisis will find comfort and laughter in this show. It's a fun and compelling dive into the opposing forces of corporate profit vs. public safety."



• "Canary in the Gold Mine raises significant health concerns which most of us may be unaware of as we rush headlong into a 5G world. Jonathan Mirin is an engaging performer who addresses these issues while keeping his audience entertained."

- John Peet, Regina, Canada.

• "Truly insightful! Jonathan introduces a crucial conversation . . . A welcome comedic relief . . ."

- Nichola Lake, Boulder

• "I had never heard of wireless causing health effects and this show was a great introduction to the issue. I'm going to look into ways to protect myself."

- Rhonda W., Greenfield, MA



## Prevalence of ES and EHS in Poland: 39.7% or <1.8%?

"The first step was the internet survey performed at the end of 2018. The IEI-EMF prevalence estimated at the level of 39.7% suggested considerable bias affecting the results [of 1,024 respondents, median age 30 and 59% women]. A second study stage was performed as a telephone survey at the end of 2020 [of 2,000 people, chosen for age and gender as representative of Polish society with 52.8% women, with different questions and different criteria for defining ES and EHS].

The latter survey allowed estimating the prevalence of IEI-EMF as less than 1.8%. ... the first group pooled was not representative. ... Corrections of the methodology before the second survey allowed reliable results consistent with the results obtained in similar studies performed in other countries.

(Tatoń G et al.: "A survey on electromagnetic hypersensitivity: the example from Poland" Electromagn Biol Med., 2021)

This prevalence of 1.8% for EHS in the general population fits with: "the prevalence of IEI-EMF/EHS is between about 5.0 and 30 per cent of the general population for mild cases, 1.5 and 5.0 per cent for moderate cases and < 1.5 per cent for severe cases"

(Bevington M: "The Prevalence of People with Restricted Access to Work in Manmade Electromagnetic Environments" J Environ Health Sci., 2019)

The Polish study did not attempt to define ES, (moderate or severe), or EHS (moderate or severe), appearing to assume a single condition with a single threshold, whereas studies show that the condition is varied in severity and thresholds.

The level of 1.8% was deduced from positive answers to two questions, S2.6 [Do you experience any health symptoms associated with the use of electrical appliances that you do not think other people feel?] and S2.7 [Were your complaints severe enough to affect your daily life or forced you to consult a doctor because of them?] Both surveys found the highest prevalence in the decade of 50-59 years.

The study recommended defining 'hypersensitivity' where other people ('non-sensitive' or 'normally-sensitive') do not suffer them. The study suggested that EHS is only when the symptoms are so severe that the persons affected seek medical attention.

1.8%, 1.2 million in the UK, ranks EHS people after the UK's fifth largest city, Glasgow (1.7m).



# EHS SKIN CASE STUDY

## Case study on ginkgo biloba efficacy

*Although a teenage boy in the UK still suffers pain during or after RF exposure, the improvement in his skin condition is remarkable.*

*By Dr Mary Redmayne, Adjunct Research Associate, Victoria University of Wellington;  
Adjunct Research Fellow, Monash University, Melbourne.*

*November 25 2021.*

I am a researcher in effects of electromagnetic fields (EMF) and my papers can be found at ResearchGate [1]. I live in New Zealand and am an advisor for PHIRE, EHT, and ORSAA.



In early June 2021 I received an enquiry from a concerned father in the UK. His teenage son was having terrible skin problems, mainly rashes and inflammation/swelling. This occurred three years after gluten ataxia was suspected and all gluten removed from the diet. For over 5 years, the family home has had no wi-fi, smart devices or cordless phones, and mobile phone usage was kept to a minimum.

The skin condition first occurred during Covid19 lockdown in March 2021 within an hour or two of going into the city for the first time in several weeks. The building had 5 GHz wi-fi and mobile phones operating and the area had telecommunication exposure sources typical of UK cities.

After several weeks of the lockdown, the child returned to school where there is wi-fi and mobile phones. The closest mobile base station is approximately 250 metres away and transmits LTE.

The boy had Diprobase applied all over, however, shortly after pick up from school the child was glowing red and inflamed again. The redness would quickly become itchy, and transform into scabs during the night causing bleeding. He only managed a day or two back at school until he was too unwell to attend – with his skin being too sore. This cycle of attending school, leaving glowing and itching, repeated over several weeks – gradually getting worse.

Their GP was contacted and it was suggested to monitor. A photograph diary was kept which resulted in the GP, sending him to a Paediatrician. The Diprobase cream was continued but made no difference to improve healing; it only moistened the skin.

The Consultant paediatrician could not explain the condition either; the child had not been anywhere due to the lockdown, apart from the medical appointment in the city. After the parents had explored other possible explanations, including diet which due to the child's sensitivity to gluten is carefully limited to a range of organic gluten-free homemade food, they contacted me. They had read a publication of mine [2] and thought maybe their son may be reacting to exposure to electromagnetic radiation from transmitting equipment; this condition is known as electrohypersensitivity (EHS for short).

After some discussion, it seemed it could be that the town EMF exposure may have been an aggravating factor. There has been some experimental research published indicating benefits of ginkgo biloba in reducing impacts of radio-frequency exposure on rats [3]. The researchers used three groups: EMF exposed, EMF exposed plus ginkgo biloba, and a control group with neither. The results led to the conclusion that ginkgo biloba may mitigate some deleterious effects of the exposure to mobile phones.

Well, clearly, we weren't dealing with a rat! But I provided details of the paper and suggested that unadulterated ginkgo biloba tablets may help, but to discuss it with a GP first to ensure suitability, dose, and frequency as I'm an academic doctor, not a medical one. As I said,



“There are no proven treatments [for EHS] but you could ask the doctor whether you could try giving him ginkgo biloba tablets (without other herbals in them) - to be sure they are suitable for his age and do not interfere with any medications he is on. It is just possible they could help although not proven.”

They sought professional medical advice and treatment began on 12 June, “initially just one a day, then from the 29th June he started taking two a day; one ... morning and night”.

He began back at school during June. Here is a comment I received from the father in mid-July, two weeks after his son began taking two tablets daily of Ginkgo Biloba.

"Thank you for suggesting the Ginkgo biloba. The first two days there was no noticeable effect, the third day there was some minor improvement and fourth day, he left school



*Hands, March 7<sup>th</sup> 2021 (after school), pre-GB, showing swelling and rashes*



*Arm, May 7<sup>th</sup> (after school), pre-GB, bad rashes*



*Legs, May 8<sup>th</sup> (after school), pre-GB, bad rashes again*

with his skin glowing, but by the evening and bedtime the glow had gone - Wow. And now while his skin is scarred, from the major skin rashes, his skin is no longer like sandpaper and it's healing. It's amazing. His homeopath has assessed the tablets and agrees they are beneficial for him and has suggested he has two 120mg tablets a day...”

And three weeks later: "The Ginkgo biloba is working a treat, speeding up the skin's recovery - we cannot thank you enough for this suggestion."

One month after this the skin continued to be well, although other health problems were emerging.

As of November 2021, five months after starting Ginkgo Biloba, his skin is healthy apart from residual scarring (see photos). There is still pain associated with being in, or having been in, town and at school and being in proximity to WiFi and mobile phones.

References:

[1] <https://www.researchgate.net/profile/Mary-Redmayne/research>

[2] After reading a paper I'd recently published: Redmayne M, Reddel S. Redefining electrosensitivity: A new literature-supported model. *Electromagnetic Biology and Medicine*. 2021:1-9.

[3] Gevrek F. Histopathological, immunohistochemical, and stereological analysis of the effect of Ginkgo biloba (Egb761) on the hippocampus of rats exposed to long-term cellphone radiation. *Histol Histopathol*. 2018;33(5):463-73.



*Legs, Nov 16<sup>th</sup> (after school), 5 months into taking GB, skin healthy but with residual scarring*



*Arms, Nov 16<sup>th</sup> (after school), 5 months into taking GB, skin completely healthy*

# READERS' COMMENTS

## Constant pain and cold

"I am so sensitive to electromagnetic fields that I have needed to live without the use of mains electricity and without any battery-operated equipment in my home for decades.

Not having central heating, my fingers are cold and my vision is very blurred after another night of little sleep because of the constant pain my EHS causes – which diminishes when not affected by EMFs."

## Smart house disaster

"We've arrived at the house we normally rent for Christmas and found it has become 'smart'. Also 4 new masts across the fields. Have tried to switch everything off (checking with wonderful Acousticom2 and using protective material and tin foil where it can't be turned off, eg smart meter and heating system), but as a consequence we have no TV, radio (blue tooth), internet, hot water. Can't work the oven or hob so we should have a very jolly time over Christmas. hey ho. There are always books and blankets. And the wet suit is primed for a sea dip.

Having not slept at all due to the radiation may well mean we shortly journey home. I had forgotten the struggles with broken sleep, terrible dreams, muscle pain, eye pain, heart rate, overheating, anxiety that is purely radiation related. How people cope for long periods I do not know. We are so fortunate to have no signal at home. All will be well."

## A place to live with less EMF

*A reader reports on the current advantages of living in or near the town of Millom, Cumbria:*



"One of the reasons I moved to Millom in 2003 was the fact that the town and the neighbouring village of Havrigg were relatively free from Radiation. The nearest cellphone and tetra mast is about 1 km from my house. Other areas on the

other side of the town are even further away, as is Havrigg by the sea. There are a few pylons in the area, but not close to town. House prices have gone up since I moved here, but are still comparatively low. The town has received a government grant of £20.6million to upgrade the centre and connect the many walks around here.



It is a charming landscape with view of the Wasdale, Eskdale and Coniston mountains, and the dunes and sandy beaches by the Irish Sea are within walking distance.

People who are searching for a safe place to live might want to investigate it further."



## Wireless phones need defibrillators?

"I see that some of the old red telephone boxes have had their wired phones replaced by defibrillators. Aren't these sometimes needed because of arrhythmias caused by too much wireless radiation from mobiles rather than wired phones?"

## False claims

"If radio frequency is 'safe', as the government keeps claiming, why do armies also use it at low levels to attack each other and harm diplomats?"

## EHS: 'murder beyond a reasonable doubt'

In October 2021 someone searched for the article in Reviews on Environmental Health of 2021, entitled 'Proof of EHS beyond all reasonable doubt' under the phrase 'murder beyond a reasonable doubt'.

## Thanks for the thanks

"A big thank you for all you do."

"Please keep up this valuable work."



# CLOTHING AND PROTECTION

## Protective clothing: copper from mushrooms

A PhD study at Manchester Metropolitan University by Linda Row FRSA et al. was “to hypothesise and test that the hyper-accumulation of copper, in some species of fungi, could be extracted and used as a protective element for the electrically sensitive population in wearable textiles.

Three samples of silk, pre-mordanted with alum or pomegranate skins, were treated with an extract of either Shiitake (*Lentinula edodes*), Blewit (*Lepista nuda*) or Button mushrooms (*Agaricus bisporus*).

Applied kinesiology (manual muscle testing) was used to measure the change in muscle strength of participants. The results showed that there was a significant difference between muscle strength and the fungi treated silk during exposure to cell phone radiation. Blewit and alum produced a better muscle response.



Seven participants were tested three times with each of the nine samples of peace silk. The initial test was to determine the presence of EM fields, using an Acoustimeter and to eliminate these. The strength of the arm muscle of each participant was tested beforehand and then a mobile phone was placed near them.”



Mushroom-treated peace silk shirt, by Linda Row

Mushroom Variety	1	2	3	4	5	6	7	8	9	10
Participant										
(a) average	5	5	5	5	5	5	5	5	5	1
Test 1	5	5	5	5	5	5	5	5	5	1
Test 2	5	5	5	5	5	5	5	5	5	1
Test 3	5	5	5	5	5	5	5	5	5	1
(b) average	4.3	4.3	4.7	4.3	3.6	4.7	5	4.7	4.3	1
Test 1	4	5	5	4	3	5	5	5	4	1
Test 2	4	4	5	5	4	5	5	4	4	1
Test 3	5	4	4	4	4	4	5	5	5	1

Examples 1 and 2 out of seven: muscular response 1-5 (1 weak, 5 strong) in a kinesiology test.

Column 10 is for peace silk with no treatment.

1. Blewit and alum, 2. Blewit and pomegranate, 3. Blewit and no mordant, 4. Shiitake and alum, 5. Shiitake and pomegranate, 6. Shiitake and no mordant, 7. Button mushroom and alum, 8. Button mushroom and pomegranate, 9. Button mushroom and no mordant, 10. Peace silk with no treatment.

Peace Silk uses slow but non-violent breeding.

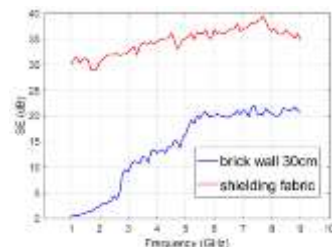
(Linda Row: “Natural levels of copper in fungi used as protection in wearable textiles for the electrically sensitive population” Seam, Arpil 15 2018; Row L et al.: “Investigation of natural levels of copper in fungi as protection in wearable textiles for electrically sensitive individuals” e-space.mmu.ac.uk. (2018) [Abstract](#). [Article](#); Linda Row Sustainable Textiles and Clothing: [website](#))

## Fabric and brick shielding at 1-9 GHz

Shielding efficiency consists of two components, EMF reflection and absorption.

For fabric, with 16% stainless steel, reflection predominates. The shielding increased from 30 dbm at 0.1 GHz to nearly 40 dbm at 7.5 GHz and then dropped again.

For brick, the shielding increased from 0 dbm (no shielding effect) at 0.1 GHz to about 15 dbm at 5.5 GHz and then levelled off.



Shielding effectiveness in dbm against frequency (1-9 GHz) for 0.3m brick (blue) and fabric (red).

Pavlik M et al., Fig.4.

A brick wall gives no reduction at 3G but for 6 GHz a reduction of 15 dbm helps. A reduction of 30 dbm from fabric helps but only if the whole wall or your whole body is shielded completely.

(Pavlik M et al.: “Compare of fabric and brick wall as shielding material dependence on electromagnetic field” IEEE, 2021)

# LETTER TO HEALTH SECRETARY

## *Copy of a letter sent to the Secretary of State for Health*



BM Box ES-UK  
London  
WC1N 3XX  
[www.es-uk.info](http://www.es-uk.info)

The Rt Hon Sajid Javid, MP,  
Secretary of State for Health and Social Care.

November 12<sup>th</sup> 2021

Dear Mr Javid,

I am writing to request your help for the estimated 800,000 people in the UK (1.2%) severely disabled by radio frequency radiation (RFR) and electromagnetic fields (EMFs). This condition, first recorded in 1733, has since then been confirmed through scientific studies beyond all reasonable doubt.

Three areas of help would be especially appreciated.

1. Cars, white goods such as fridges and washing machines, and routers are increasingly using Wifi or Bluetooth, but without a switch to stop the radiation.
  - ▶ Could you require, please, that the manufacturers and retailers ensure that all such radio transmitters have an on/off switch?
2. Many areas of housing have phone masts nearby, especially for 5G.
  - ▶ Could you require, please, that local authorities ensure, and publicise, that there are areas in each city or town which are free of this radiation, so that people severely disabled by it can live in their own homes?
3. Some public premises, such as hospitals, schools, sports centres and shopping centres, have Wifi.
  - ▶ Could you require, please, that these switch off this radiation at certain times or in certain areas to give access to people severely disabled by RFR like Wifi?

Your help in reducing radiation would be greatly appreciated by these people. Many have lost their jobs, homes and health because of it, and some have lost their lives.

Yours sincerely,  
Michael Bevington  
Chair of Trustees, Electrosensitivity UK

Attached: Notes 1-30

## NOTES

1. This functionally disabling intolerance has been described since 1733 and in detail since 1932.
2. In 2005 the World Health Organization described it as an 'environmental intolerance' (EI).
3. Since 2006 some UK employers have removed Wifi for people with this RFR intolerance.
4. From 2012 courts in the UK and worldwide have recognised RFR EI as a functional disability.
5. Canada, Sweden, the USA etc. specifically require equality of access for people with RFR EI.
6. Since the 1930s non-thermal effects have been shown as primary, with heating secondary.
7. The first RFR safety guidelines were non-thermal, in the 1930s.
8. Most guidelines are now non-thermal and long-term, apart from ICNIRP's and the FCC's.
9. The ICNIRP's thermal and short-term guidelines are 'obsolete', 80 years behind the science.
10. Thus ICNIRP's thermal and short-term guidelines are arbitrary, unscientific and unprotective.
11. However, in 2002 the ICNIRP accepted that some people are more vulnerable than others and required governments to set non-thermal and long-term guidelines necessary to protect them.
12. Non-thermal and long-term guidelines include Bioinitiative 2012, Building Biology 2008, EUROPAEM 2016, IGNIR 2018 and Seletun 2010:
  - (a) All use mainstream scientific evidence, not ICNIRP's arbitrary minority selection.
  - (b) They distinguish 'sensitive' as children, pregnant women, the elderly, the ill and EI.
  - (c) Protection against the cumulative harm of RFR and EMF exposure is through time-limits, especially for children, and radiation-free zones for living and sleeping areas.
13. People severely disabled by RFR need, as the very minimum requirement, RFR-free zones (as under EU Resolution, 2009, and Council of Europe Parliamentary Assembly Resolution, 2011).
14. Other RFR/EMF effects include poor sleep, infertility, neurological and memory harm, cancers.
15. In 2011 WHO's IARC classified Wifi and all RFR as a 2B cancer agent, as it did EMFs in 2001.
16. Since 2013 experts have stated the evidence is sufficient for RFR to be a class 1 cancer agent.
17. The FDA/NTP study of 2018 confirmed 'clear evidence' of cancer from RFR, known since 1953.
18. The Ramazzini Institute in 2018 confirmed cancer at phone mast levels, known since 2004.
19. The WHO's ICNIRP, a 'front' supporting the radiation industry, still holds its invalidated heating hypothesis, described as 'arbitrary' by US regulators in 1957 and again by US judges in 2021.
20. The WHO handed over its responsibility for radiation health to the radiation industry in 1959.
21. The ICNIRP still denies non-thermal effects, e.g. EI and cancers, established from 1932/1953.
22. All members of the private group ICNIRP hold the invalidated minority heating hypothesis.
23. Some courts refuse to accept ICNIRP-based studies and reviews as unscientific and biased.
24. PHE/UKHSA supplies ICNIRP members and also recommends ICNIRP's invalidated guidelines.
25. PHE employees were forbidden by the Dept. of Health from admitting to non-thermal effects.
26. In 2005 the WHO/PHE arbitrarily denied RFR EI, redefining it as electrophobia, distinguished as different in 1903, yet the military, eg QinetiQ, uses RFR non-thermal weapons (since 1953).
27. Many countries, e.g. Russia, a leader on RFR health, have much lower limits than the UK.
28. Hundreds of mainstream experts have asked the WHO for scientific and protective guidelines.
29. A current conflicted WHO EI review is mainly thermal and thus unscientific and arbitrary.
30. Since the 1990s UK underwriters have refused to insure RFR, except as high risk like asbestos.

## DHSC reply on ES, with Comments by M Bevington, January 2022

*REPLY of January 7 2022 from the DHSC Ministerial Correspondence and Public Enquiries to the letter by M Bevington, the ES-UK chair of trustees, of November 12 2021 [above], to the Rt Hon Sajid Javid, MP, Secretary of State for Health and Social Care:*

“I note that you have requested changes to the law concerning the operation of household products. I cannot comment on this as the Department of Health and Social Care can only comment on matters within its own remit.

With regard to RFR and EMFs generally, technical standards used by industry in bringing EMF-emitting products to market in Europe are linked to guidelines from the International Commission on Non-Ionizing Radiation Protection (ICNIRP) on limiting exposures to EMFs. Studies have shown that exposure to radio waves from smart meters is well below the ICNIRP guidelines and also likely to be much lower than that from other everyday devices such as mobile phones and Wi-Fi equipment. More information on these studies can be found at [\[link\]](#). If the guidelines from the ICNIRP are adopted, there should be no consequences for public health.

However, it is known that some people complain of sensitivity to EMFs at levels of exposure much lower than the ICNIRP restriction values. Moreover, it is fully accepted that these people have real and unpleasant symptoms that they attribute to exposure to EMFs. In recent years, considerable effort has been put into researching symptoms in relation to EMF exposures, especially for radio communications technologies.

*COMMENTS by M Bevington, author of ‘Proof of EHS beyond all reasonable doubt’ [\[link\]](#):*

Ofcom’s Advisory Committee for Older and Disabled People (ACOD), when asked about similar disability changes in 2021, said that they could not comment on disability caused by RFR and EMFs because ‘the health effects of Electromagnetic Radiation are beyond our role’. They advised consulting PHE/DHSC, as responsible for RFR and EMF illness. If the DHSC does not cover RFR ill health, it is unclear which department does.

ICNIRP guidelines are unscientific and unprotective against Electrosensitivity (ES) and cancer. They are for heating only and short-term, voted obsolete [\[link, 22\]](#) by the EU Parliament in 2008. The DHSC should adopt scientific and protective non-thermal long-term guidelines. US Appeal Judges called heating limits ‘arbitrary’ in 2021. DHSC/ICNIRP’s thermal myth was known to be invalid in the 1930s. WHO’s IARC classified non-thermal RFR as a 2B cancer agent in 2011, confirmed with ‘clear evidence’ by the FDA/NTP 2018 study. Smart meters emit RF radiation above international biological peak safety limits, hidden by ICNIRP’s averages. ICNIRP also accepts the need for non-thermal limits.

Electrosensitivity is a physical environmental intolerance to electromagnetic fields, first described by a Fellow of the Royal Society in 1733. Many cases are genetic, with specific genetic haplotypes nearly ten times more common in electrosensitive people than others. Some 1.2% (800,000 people, UK) are disabled by specific symptoms. These can be caused by man-made radio devices like Wifi and mobiles, walking fast through magnetic fields near MRI scanners, transcranial magnetic stimulation and thunderstorms.

The independent Advisory Group on Non-ionising Radiation (AGNIR) performed a comprehensive review of the scientific evidence, which was published in 2012. AGNIR concluded that the evidence suggests that radiofrequency field exposure below guideline levels does not cause acute symptoms in humans.

There is limited evidence to guide the management of affected individuals. A 2005 review found that the majority of conventional medical effort had been directed at avoidance of triggers, and psychological therapy such as cognitive behavioural therapy. Evaluation of psychological therapy had been limited but showed some potential for success. However, psychological treatments are not acceptable to some sufferers.

There is also information on electrical hypersensitivity from the World Health Organization, which includes specific guidance for physicians. It states that treatment of affected individuals should focus on the health symptoms and the clinical picture, and not on the person's perceived need for reducing or eliminating EMF in the workplace or home.

Given the evidence on these matters, which does not support the theory that EMF exposure causes symptoms, the best advice that can be given to those who consider their health is being affected by EMFs is that they should discuss the symptoms they are experiencing with their doctor. Their doctor will have access to their medical history and be able to suggest treatments for their symptoms, considering any known underlying medical cause.”

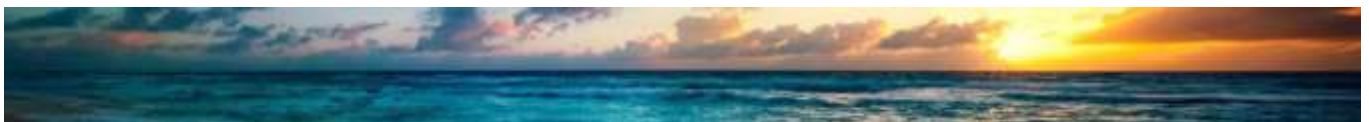
*With thanks for forwarding to Greg Smith MP.*

AGNIR held the invalid thermal theory under Doll, then paid by polluting industries. Its 2012 review was notorious for its inaccurate misleading analysis and serious conflicts of interest, with members from other industry 'front' groups like ICNIRP and also PHE. AGNIR was disbanded in 2017, the year after Starkey's devastating critique [\[link\]](#).

There is substantial recent evidence after 2005 from international experts on treating people with ES [\[link, link, link\]](#). All experts – the DHSC/ICNIRP/WHO have none - agree that the key requirement is the elimination or reduction of the electromagnetic fields causing the symptoms. This treatment was also the key method of diagnosis used to define ES as EI-Allergy in the international Nordic ICD-10 of 2000, the same year when ES was first recognised legally as a disability.

The anonymous information by the WHO is regarded by all experts as invalidated and outdated in its unproven claims [\[link, link\]](#). In 2005 the WHO, legally subservient to the radiation industry, unscientifically conflated two different conditions, ES, known since 1733, and electrophobia, known since 1903. All expert physicians advise that treating ES begins with eliminating or reducing EMFs.

The weight of evidence proves beyond all reasonable doubt that EMF exposures cause the specific symptoms of ES, as known since 1733. If humans were not electrosensitive, they would not be alive. Since the 1950s, the military has used EMF weapons to cause ES symptoms. Since the 1990s, underwriters have refused to insure EMF harm, except as high risk, like asbestos. The erroneous claims of DHSC/ICNIRP/WHO denying ES are unscientific, unprotective and arbitrary. Their unfounded fiction about ES leads to inappropriate mistreatment and harassment of ES people with RFR and EMF intolerance.



# IGNIR COMPLIANCE FORM

This form allows you or a building surveyor to record how far a room is in compliance with the RFR and EMF guidelines of the International Guidelines on Non-Ionising Radiation (IGNIR).

Supplement 3

**IGNIR COMPLIANCE FORM [DRAFT]**

Address:	Room:	Name of surveyor:	Signature:	Sheet no.:
RF Meter Make:		Comments:		
ELF Meter Make:				
		<b>IGNIR COMPLIANCE</b>		
		<b>Day / Night / Sensitive</b>		
<b>RF</b>	Av.	D/N/S	Av.	V/m
	Max	D/N/S	Max	
$\mu\text{W}/\text{m}^2$	Av.	D/N/S	Av.	$\mu\text{W}/\text{m}^2$
	Max	D/N/S	Max	
<b>VLF</b>	Max	D/N/S	Max	G-S Units
		D/N/S		
<b>ELF</b>	Av.	D/N/S	Av.	V/m
	nT	D/N/S	nT	
	Max	D/N/S	Max	

[Please send any suggestions for improvement to IGNIR.]

Notes:



# HARM FROM MASTS AND 5G

## Legal victory against 5G mast including non-thermal health grounds

*Carol Springgay and Carole Ward on their win against a mast approval near a school in Brighton:*

“We are delighted to announce the fantastic news that we have WON the judicial review case against Brighton & Hove City Council. They chose not to contest our claim and conceded. The High Court of Justice has QUASHED the decision made by Brighton and Hove City Council, resulting in the refusal of the original planning application. The telecoms company will not be able to appeal this decision because they did not object at the judicial review stage.

We are delighted by this result and wish to thank you all for your kind support.

Brighton & Hove City Council conceded on the following grounds: The decision was unlawful for the following reasons:

- (i) the Council unlawfully determined that the highway safety implications of the cabinets and the concerns expressed by the Council’s highways team were not a relevant consideration;
- (ii) the Council failed to address the health impacts of this particular proposal and to obtain adequate evidence of the assessment of the proximity to the school and the amended proposal;
- (iii) the Council failed to consider whether the facility could be sited on an existing building or structure, the Interested Party having failed to provide any evidence on that matter.”

(Carol Springgay and Carole Ward: “We WON our case!” November 22 2021)

## Brighton mast approval quashed under Judicial Review

The High Court, Queen’s Bench Division, Planning Court, before the Hon. Mr Justice David Holgate, R(o.a.o. Carol Springgay) claimant and Brighton & Hove City Council defendant and Hutchison 3G UK Ltd Interested Party: Consent Order, CO/3114/2021, November 2 2021:

Upon reading the Statement of Facts and Grounds for Judicial Review claim and supporting evidence and the Defendant confirming that they will not be defending the claim, And upon reading the Statement of Reasons justifying the making of this Order as agreed between the parties It is ordered that:-

1. The application for permission for judicial review is granted;
2. The claim for judicial review is allowed on the basis set out in paragraph 2;
3. The Defendant’s decision notice of 30 July 2021 granting prior planning approval under reference BH2021/01639 for the Installation of a 15m Phase 8 Monopole with wraparound cabinet at the base and installation of 3no ancillary cabinets on land south of 91 Fishersgate Terrace, Portslade is quashed;
4. The Defendant shall pay the Claimant’s costs of and incidental to the instant claim to the issue and service of proceedings in the agreed sum of £13,340 VAT inclusive.



**Brighton & Hove  
City Council**



### First live study shows 5G causes ES symptoms

The first live and in situ provocation study of real 5G exposure was published in February 2022.

It showed that people can develop ES symptoms from 5G. This confirms that

(a) 5G is dangerous for the general population and should be banned until made safe, and

(b) ICNIRP's short-term heating-only Guidelines are unscientific and unprotective and should be replaced

by the scientific and protective standards of international long-term and non-thermal Guidelines e.g. Bioinitiative, EUROPAEM, IGNIR and Seletun.

"This case study shows that a 5G base station on the roof above a home caused a sharp increase in microwave radiation. This led to two people living in the home developing clear symptoms of the microwave syndrome within a couple of days. When moving to housing with significantly lower radiation, the symptoms decreased or disappeared quickly. The study also shows that radiation far below levels allowed by the authorities causes ill health."

(Hardell L et al.: [Microwave radiation from base stations on rooftops gave medical symptoms consistent with the microwave syndrome] [Swedish] (Medicinsk Access, 2022); "First Study so Far: 5G Causes the Microwave Syndrome" TBH, February 27 2022)

### Case study on ES symptoms from working in RFR and EMFs

A previously healthy worker developed symptoms assigned to electromagnetic hypersensitivity (EHS) after moving to an office with exposure to high levels of anthropogenic electromagnetic fields (EMFs). These symptoms consisted of e.g. headache, arthralgia, tinnitus, dizziness, memory loss, fatigue, insomnia, transitory cardiovascular abnormalities, and skin lesions. Most of the symptoms were alleviated after 2 weeks sick leave. The highest radiofrequency (RF) field level at the working place was 1.72 V/m (7,852  $\mu\text{W}/\text{m}^2$ ). Maximum value for extremely low frequency electromagnetic field (ELF-EMF) from electric power at 50 Hz was measured to 285 nT (mean 241 nT). For electric train ELF-EMF at 16.7 Hz was measured to 383 nT (mean 76 nT). Exposure to EMFs at the working place could be the cause for developing EHS related symptoms. The association was strengthened by the symptom reduction outside the working place.

(Hardell L et al.: "Electromagnetic hypersensitivity close to mobile phone base stations - a case study in Stockholm, Sweden" (Rev Environ Health, 2022)

### Typical exposures, safe and biological guidelines. unsafe and arbitrary ICNIRP still used by UK

V/m	dBm	$\mu\text{W}/\text{m}^2$	Limits and typical exposures	Source, Guidelines
~0.0000002	~ -90	~0.0000000001	natural background	safe for humans, wildlife
0.01	-56	0.3	resting membrane potential	erythrocytes, red blood cells
0.02	-51	1	children, ES persons	IGNIR Guidelines
0.04	-46	3	children	Bioinitiative Guidelines
0.05	-43	6	adults	Bioinitiative Guidelines
0.06	-41	10	night, healthy adults	IGNIR Guidelines
0.07	-40	12	resting membrane potential	axons in the human nervous system
0.2	-31	100	day, healthy adults	IGNIR Guidelines
4	-5	42,000	shopping centre	Celaya-Echarri M et al, IEEE, 2021
12	+5	382,000	one smart meter, 0.3m	Aerts S et al, Environ Res, 2020
28	+12	1,920,000	bank of smart meters, 0.3m	Aerts S et al, Environ Res, 2020
61	+19	9,600,000	heating effects only; does not prevent cancer, ES, neurological harm, etc	ICNIRP Guidelines, unscientific and arbitrary, but still used by UK

A difference of 3 dbm = a doubling or halving of the amount the RFR.

dBm deciBel-milliwatts where 0 dbm = 1 milliWatt. See also page 1 for another Table of dBm.

### Very high radiation from street mobile phone transmitters at low heights

“The highest spatial average across all quadrat cells was  $12.1 \text{ V m}^{-1}$  ( $388 \text{ mW m}^{-2}$ ), whereas the maximum recorded reading from the entire area was  $31.6 \text{ V m}^{-1}$  ( $2648 \text{ mW m}^{-2}$ ). Exosimeter measurements show that the majority of exposure is due to mobile phone downlink bands.

The average RFR values from the earlier studies show that the level of ambient RF radiation exposure in Stockholm is increasing. This study concluded that mobile phone base station antennas at Skeppsbron, Stockholm are examples of poor RF infrastructure design which brings upon highly elevated exposure levels to popular seaside promenade.”

“Based on the latest scientific literature regarding RF exposure and adverse health effects, this study recommends repositioning such base station antennas to areas away from the nearby inhabitants, workers and the general public. Alternatively, very low power antennas may also be considered to reduce the exposure.

Occupational exposure of people working close to the antennas should also be considered – shop clerks, restaurant workers are likely to spend considerably longer time under high exposure, compared to the general public.

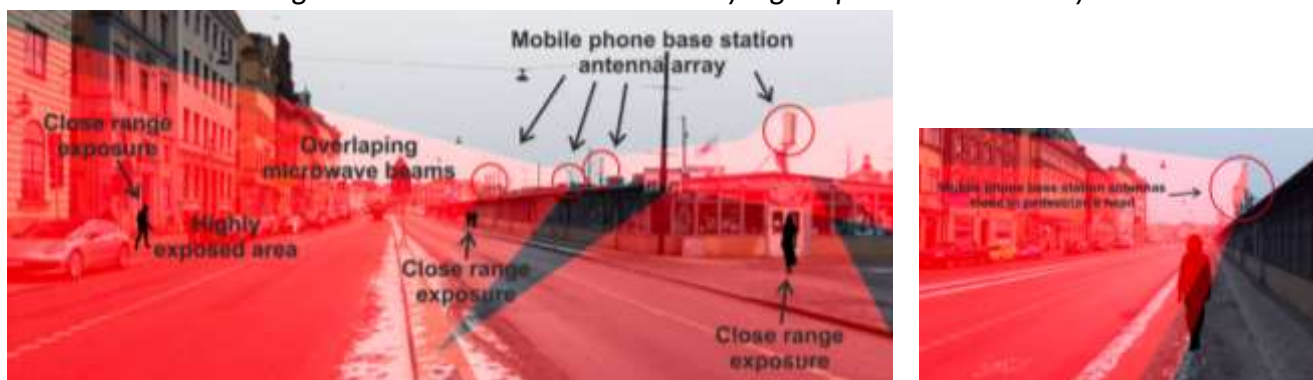
The following recommendations for RF infrastructure can be concluded from the study.

1. Antennas should be positioned as far as possible from the general public, like locations at the high elevations or remote areas, where the antenna targeted area is not regularly / frequently visited by the members of the public.
2. Only low power output mobile phone base station antennas ( $< 15\text{W}$ ) should be used in the city environment.
3. To avoid hotspots, created by overlapping arrays, dense packing of many antennas at one site should be avoided.
4. Low power antennas in the city environment should be positioned in locations where direct beam would not hit the public under 50m.”

(Koppel T et al.: “Very high radiofrequency radiation at Skeppsbron in Stockholm, Sweden from mobile phone base station antennas positioned close to pedestrians' heads” Environ Res., 2022)



Koppel T et al.: Fig. 5. “The antennas are mostly facing the buildings, as the operators want to force the wave into the old town through the narrow streets ... creates very high exposure levels nearby.”



Koppel T et al.: Fig. 4. Problem ... antennas created high exposure at Skeppsbron street, with 15 antenna panels all at low elevation close to the street level; “the maximum RF exposure was at  $31.6 \text{ V m}^{-1}$ ”.

Koppel T et al.: Fig. 3. Street view on the Skeppsbron Street: “note the low placement of the antennas, where microwaves irradiate the pedestrian at close range”.

## Unnecessary high radiation

Many radiation devices have very high but unnecessary signal strength: -67 dBm [0.003 V/m or 0.02 uW/m<sup>2</sup>] provides very good Wifi connection.

(Michelle Pierce: "WiFi Signal Strength: A No-Nonsense Guide" *securedge*, Jan. 14 2021)

## RFR varies by 5dBm over 3m

-18.15 dBm was recorded for the 1<sup>st</sup> floor of an educational establishment in Romania on 5.00pm on a Saturday where there was a base station outside the building and another on the roof. A small change in angle makes a difference of about 5 dB for a distance of 3 meters between two measurement points.

(Andriesei C et al.: "Indirect characterisation of indoor RF EMF exposure to nearby mobile phone base stations" *IEEE*, 2021)

## 6.0 V/m in a flat: Bioinitiative 0.04 and 0.05 V/m safety limit

One apartment in Stockholm had maximum indoor E-field at 3 V m<sup>-1</sup> in the bedroom on the 7th floor, and a maximum outdoor of 6 V m<sup>-1</sup> on the 8th floor balcony, at the same height and 6.16 m away from the base station antennas.

For comparison, a low exposure apartment had a max. indoor field of 0.52 V m<sup>-1</sup> measured at the corner window, and a maximum outdoor field of 0.75 V m<sup>-1</sup> on the balcony facing the same base station antennas. The minimum field, 0.10 V m<sup>-1</sup>, was closest to the centre of the building.

There was good mobile phone reception in both apartments.

(Koppel T et al.: "RFR from nearby mobile phone base stations-a case comparison of one low and one high exposure apartment" *Oncology Letters*, 2019)

## 5G signal at 22m of 5.71 V/m, (IGNIR limit 0.02 V/m)

Downstream measurements from a non-commercial mast at 29.5 GHz in Malaysia over three days in March 2021 gave readings at 22 metres of up to 5.71 V/m for video call.

(Wali SQ et al.: "RF-EMF Exposure Measurement for 5G over mm-Wave Base Station with MIMO Antenna" *IEEE*, 2022)

## ICNIRP 3 million times too high

*From an article explaining how the World Health Organization (WHO) has failed to protect against the established harm from RFR because of the industry 'front' ICNIRP. It concludes: "I urge policymakers to protect the public from invisible yet ever-thickening electro-smog."*

"ICNIRP only recognizes EMR exposure's harm if it significantly heats tissue within a few minutes. These are called "thermal effects." ICNIRP's guidelines do not recognize EMR exposure's non-thermal effects, which thousands of peer-reviewed scientific studies associate with cancer, sleep disturbances, cognitive difficulties, DNA damage, cellular damage, impaired fertility and much, much more.

ICNIRP is a small private German organisation. An extensive 2020 report by two Members of the European Parliament accused ICNIRP of conflicts of interest. Over ten years ago, the Council of

Europe asserted that ICNIRP's standards on exposure to EMFs "have serious limitations," and petitioned ICNIRP to reconsider its standards. So far, the Council has not received a response.

Indeed, scientists have reported adverse biological effects to EMR exposure at levels one million times below ICNIRP's standards.

Bioinitiative's scientists recommend limiting EMR exposure levels to three million times lower than those recommended by ICNIRP. "

(Miguel Coma: "Is the WHO impaired by electro-smog? A commentary on regulating 5G radiation" *Wall Street International Magazine*, November 23 2021)



## USA: 5G at the gym

"5G was turned on this week. The only place I go without my shielding on is the gym. I used to be able to get a decent workout in about an hour without getting sick, as long as I stayed away from the WIFI router. They just turned 5G on and I was sick for 2 days after a 1 hour exposure there. I wasn't 100% sure it was my gym so I went back this week. I was sick with an unreal migraine for 3 days and also almost vomited right after the work out. I will not be going back and am cancelling my membership, but also am looking into what can be done...legally."

(Liz Barris, The People's Initiative, January 23 2022)

## IEEE and ICNIRP's problems over 5G heating-only standards

Some excerpts from the critique of the IEEE and ICNIRP's 5G limits by



Professor Emeritus James C Lin, a Life Fellow of the IEEE, a former member of ICNIRP, and a former president of the Bioelectromagnetics Society.

### 1. RFR: a 2B carcinogen

The WHO's IARC classified exposure to RF radiation as a 2B possible carcinogen in 2011.

### 2. 5G health impacts unknown

To date, there has not been a single reported epidemiological study that investigated mm-waves and their potential health effects. ... The jury on biological effects is still out.

### 3. Inconsistency over cancer heating of 1° from NTP study

The recently updated safety guidelines and standards are recommendations for short-term exposures of 6 to 30 min, based on limiting whole-body temperatures from rising above 1 °C or tissue temperatures to 5 °C. If the entities responsible for safety recommendations believe what appears to be their position concerning experimental results from rats from the NIEHS/NTP that a whole-body temperature rise of 1 °C is carcinogenic, then the safety factors of 50 adopted for the public or 10 for workers would be marginal for their

stated purpose and practically meaningless from the perspective of "safety" protection (more so >6 GHz).

### 4. Harm from acoustic pressure waves at under 1°

Generating a tissue-injuring level of sound at 120 dB would take another 1,000-fold increase in required peak power density, or 14 GW/m<sup>2</sup> per pulse. Such high-power, microwave-pulse-generated, acoustic pressure waves can be initiated in the brain and then reverberated inside the head to potentially, if not surely, cause serious injury of white and gray brain matters, along with other neural elements. Yet the corresponding, theoretical temperature elevation would be roughly 1 °C, which is considered safe by current protection guidelines.

### 5. Harm from heating at under 5° increase with a safety margin of only 2 or 10

The referenced local-tissue-temperature rise in the head, torso, and limbs of humans is 5 °C. This level of temperature rise would bring the tissue temperature from a normal value of 37 °C to a hyperthermic 42 °C. A 42 °C tissue temperature is known to be cytotoxic, with exponential cell-killing capacities. It is used as the basis for clinical cancer therapy in hyperthermia treatment for cancer protocols. The recently updated safety recommendations provide a reduction factor of 10 for the public's safety and a reduction

factor of two in the case of workers. In this situation, the efficacy of these updated safety recommendations is borderline, and the updated recommendations are meaningless from the perspective of safety protection.

Table 1 showed that the potentially lethal 5° heating increase for >6GHz was to be limited for local head and torso over 4 cm<sup>2</sup> for an average of 6 minutes by a factor of 10 to 20 W/m<sup>2</sup> (in 1 cm<sup>2</sup>), and for >30GHz to 40 W/m<sup>2</sup> (in 1 cm<sup>2</sup>) for limbs, while occupational workers could be exposed by 5 times more, up to 100 or 200 W/m<sup>2</sup> respectively.

[20 W/m<sup>2</sup> = 20,000,000 uW/m<sup>2</sup> IGNIIR limits are 20 or 40 million times lower and for children, the elderly, pregnant women, EHS etc., are 2 or 4 billion times lower: 0.000001 W/m<sup>2</sup> = 1.0 uW/m<sup>2</sup>]

### 6. IEEE and ICNIRP on 5G: lacking scientific justification

In summary, the safety recommendation updates were based primarily on limiting the tissue-heating potentials of RF radiation to elevate body temperatures. Moreover, aside from the aforementioned anomalies, the existing scientific data are too limited—especially at mm-wave-lengths—to make a reliable assessment with any certainty. Some of the updated safety recommendations are marginal, questionable, and lack scientific justification from the perspective of safety protection."

(Lin JC: "Health Safety Guidelines and 5G Wireless Radiation" IEEE, 2022)

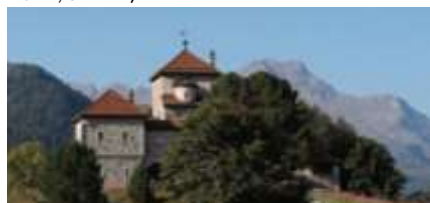
## RFR: “We are guinea pigs in a massive experiment threatening our health”

In a webinar on November 3 2021, for which over 1,000 people registered worldwide, Dr. Joel Moscowitz, Director, Center for Family and Community Health, School of Public Health, UC Berkeley, USA, ended his presentation with the words:

“We are guinea pigs in a massive technological experiment that threatens our health. Our government must fund the research needed to determine a safe level of wireless radiation exposure and strengthen the FCC’s RF exposure limits. In the meantime, the government should impose a moratorium on technologies that increase our wireless radiation exposure to new forms like 5G.”

A review of tumour risk and mobile phone use from 2020 showed that “cellular phone use with cumulative call time more than 1000 h [17 minutes per day over 10 years] statistically significantly increased the risk of tumours”. Increases in brain tumour incidence have now been reported in 11 countries. In 2020, the telecom industry spent \$108 million on lobbying at the federal level in the U.S.

(Dr. Joel Moscowitz: “Health Effects of Cellphone & Cell Tower Radiation: Implications for 5G” Webinar, November 3 2021, 82 min)



## Switzerland: 5G exceeds limits

“Radiation from 5G antennas cannot be effectively measured today. “Measurement” results are based only on model calculations. They are ultimately estimates that can be influenced by the mobile network operators. The population is thus exposed to uncontrollable radiation. We demand an immediate 5G moratorium and compliance with the limit values at all times as long as radiation exposure cannot be measured effectively. Extensive test measurements already show that the calculated results are often far from reality and that the limit values are exceeded many times over. In addition, the measurement protocols are usually kept secret, and acceptance measurements are not even carried out for numerous antennas. In about one fifth of cantons, limit values were exceeded.”

(Medienmitteilung «Telekom-Firmen wirken bei 5G-Kontrollmessungen mit» [Press release “Telecom companies are involved in 5G control measurements”] Schutz-vor-Strahlung.ch, December 13 2021; “Switzerland: Exceeding Limits the Order of the Day: Telecoms Companies Cooperate in 5G Control Measurements” TBH, December 15 2021)

## India: dangers of 5G in dense population

“The 5G associated health hazards is not being discussed at levels where it should be. The population density is much higher in India as compared to the advanced countries where 5G is already in use on a limited basis. Higher the frequency,

more is the attenuation due to atmospheric condition and screening effect by buildings. What it entails is that the number of cell towers per square kilometer (sq km) also will need to go up. The antennas for 5G would be highly directional as compared to 2G/3G. This would result in the presence of higher concentration of microwaves in populated areas leading to health hazards. The proliferation of antennas for 5G would be much higher as compared to 4G.



Some safety measures include:

- avoid living near a 4G and 5G cell tower or mini station;
- plan for directional metal EMF screen, if staying within 100m;
- refrain from using cell phone for long periods;
- avoid keeping cell phone in bedroom while sleeping;
- when traveling, keep it in an EMF protective bag;
- spread awareness about the wireless harmful effects.
- An educational campaign should be carried out to educate the public about the health risks of exposure to RFR, and safe use of the technology, such as the deployment of wired internet in schools.”

(Brig Akhelesh Bhargava (Retd): “Rolling out 5G in India: knowing the harmful impact” Financial Express, January 30 2022)

## Mast rent slashed: Who wants a mast on their land now?

Government rule changes recalculating rental values have led to reduced rents from mobile phone companies, by a total of around £1 billion since 2017. The Digital Economy Act saw rents reduced by 90% for organisations and landowners. The government rejected a consultation by the DCMS, instead offering a new complaints process.

The Highfield Park Visitor Centre in St Albans, Herts, said its rental income from masts has fallen from £10,000 a year to just £200. Park manager Richard Bull said: "We wanted them to take their mast away – but of course they won't; instead they're adding more and more infrastructure and we can't do anything about it."

Ed Bailey, who runs a family hill farm in Gwynedd, North Wales, originally agreed an annual rent of £5,500 early in 2017 but, months later, the rent was reduced to just £3.50.

(Simon Neville: "Government rejects calls for mobile phone mast overhaul" Evening Standard, November 25 2021)



## Douglas mast rejected

The Environment Department supported an independent planning inspector's recommendation to throw out the application by telecoms firm Sure for a 15m (49ft) mast

in a conservation area in Woodbourne Lane in Douglas.

(“Douglas Council welcomes scrapping of 'unacceptable' phone mast” BBC News, January 21 2022)

## Dudley rejects 5G mast

An application for a 15m 5G mast near the entrance to the Black Country Museum on Tipton Road has been turned down by planners at Dudley Council. The museum stated: "It will overshadow the museum entrance".

(Helen Attwood: "Bid for towering 5G mobile phone mast outside Black Country museum thrown out" Dudley News, February 1 2022)

## Meath mast rejected

Meath County Council refused planning permission for an 18m mast in Drumconrath village. Local residents described the proposed structure as a "monstrosity" and there were fears for the health of schoolchildren, as it is close to the local school.

(Anne Caset: "Phone mast fails to get a good reception with council planners" Meath Chronicle, January 19 2022)

## Wakefield: government forces 5G mast against planners

The government insisted on a 5G 20 metre (65 foot) mast on Dewsbury Road in Lupset, Wakefield, months after the local council rejected such plans. The Planning Inspectorate described the mast as "essential" and said the need for "an electronic communications system should not be questioned". Wakefield West councillor Michael Graham, one of 86 people to object to the original

application, said he was deeply unhappy with the result: "What is the point of the planning process here if the decision is just going to get overturned? Clearly they (the government) think local people don't have a clue about their own communities."

Dismissing concerns about people's house prices, the report said: "The planning system does not exist to protect private interests such as value of land or property."

(David Spereall: "65ft phone mast will be built by homes in Wakefield because 'government doesn't have a clue'" Examiner Live, November 16 2021)



## Wandsworth rejects 5G mast

A 15m 5G mast next to Swaby Gardens, a children's playground, and between Earlsfield and Beatrix Potter, two primary schools, was refused by Wandsworth council due to the "upset" and "anxiety" it has caused in the community.

Council planning boss, Cllr Guy Humphries, said: "This application caused a great deal of upset and anxiety in the local community and these were concerns shared by us in the town hall. We whole-heartedly agreed that this was absolutely the wrong location for such a tall phone mast."

(James Mayer: "Plans for 5G mast next to children's playground refused after causing 'upset' and 'anxiety'" London News Online, December 4 2021)

## How green is 5G?

Some notes from Sally Beare's article of Nov. 2021 in *Envirotec*:

### 5G energy use

One 5G base station uses as much electricity as 73 homes, a threefold increase over 4G. Huawei analyst Dr Anders Andrae says that, including base stations, data centres and devices, telecoms could use 20% of the world's electricity by 2025 compared to 11% in 2021. By 2030 5G could create ten times the greenhouse gases of aviation's 2.5% in 2021.

### In addition to 4G energy use

5G is building on 4G, not replacing it and 4G usage is increasing. So energy use will grow even if 5G becomes more efficient. Soaring emissions will not slow before 2035.

### Faster data = more energy use

The GSMA warns that mobile data traffic growth of up to 50% drives an increase in power consumption, despite 5G being more power-efficient.

### Fossil, renewable, battery use

'Energy credits' allow tech giants to claim they are using renewables despite their data centres using fossil fuels. Providers have told users to switch 5G off to save batteries.

### Hidden energy and pollution: manufacturing and disposal

Telcos must factor in the cradle-to-grave carbon footprint of products, including mining, and the backhaul between base stations. There will be greater demand for rare metals, causing environmental destruction. Producing

microchips requires 32g of raw materials per 2G chip. Heavy metals leach toxins and may comprise 70% of US landfill.



### Satellite pollution

Part of the 5G plan entails deploying 100,000 satellites, to be renewed every five years. These irritate weather forecasters and astronomers and deposit black carbon and particles of alumina which warm the stratosphere and deplete the ozone layer.

### 5G & harm to wildlife

Telecoms reports omit RFR effects on wildlife, including pollinators such as bees. The British Ecological Society identified RFR as one of the top emerging issues affecting global biological diversity. Many species navigate electromagnetically so the growing cloud of 'electrosmog' may be the final straw. Higher-frequency RFR, as in 5G, is more readily absorbed by insects. Trees are adversely affected by RFR, and often felled as blocking RFR. Even soil microbes are affected, and base stations can turn pathogenic microbes drug-resistant.



### 5G & harm to humans

Researchers contest claims by governments and telecoms that RFR is safe. A 2018 *Lancet* article explains that the idea that 'non-ionising' radiation is benign is an outdated myth. In 2021 Professor John William Frank, Usher Institute, University of Edinburgh, called for a halt to the 5G rollout. He outlined RFR risks: reproductive, oncological, neuropsychiatric, and immunological, in addition to DNA alteration, and gene expression and antibiotic resistance risks. RF scientists say RFR should be categorised as a Class 1 carcinogen.

Governments and industry rely on guidelines by ICNIRP, a non-accountable body ruled biased by two EU courts and under investigation by two MEPs. In 2021, US judges ruled the FCC ignored evidence of harm.

### Wired solutions

The Environmental Health Trust and others are pushing for increased use of wired solutions. Huawei founder Ren Zhengfei said that we do not have an urgent of 5G.

(Sally Beare: "How green is 5G?" *Envirotec*, November 2021)

### RFR 5G not eco-friendly

Another excellent article on RFR and 5G environmental harm concludes: "A moratorium on the 5G roll-out is urgently needed, and all who care about life on Earth should unite in vigorously campaigning for one." (Annie Fitzgerald: "Wireless footprints: the hidden environmental cost of convenience" *Medium*, December 20 2021)



# EMF LIGHT SENSITIVITY

Local councils can shield or remove harmful LED street lights to stop injuring people sensitive to them. Local councils should also do the same for other EMFs, e.g phone masts, neighbours' Wifi and smart meters.

## Sensitivity to LEDs: keeping sodium a 'reasonable adjustment'

From *LightAware Newsletter, Summer 2021*:

"I saw that other areas of the city were being changed to LED – there were very big, bright lights in the town centre and I was getting headaches whenever I went into town.

I phoned the street lighting department and managed to speak directly to the Chief Engineer. Though I first had to convince them of my problem, they did want to help. I had letters from my consultant neurologist and an ophthalmologist as medical evidence. The Council's Equality Office was very supportive, as was my local County Councillor.

The Streetlighting Department tried to find compromise solutions, taking time to trial amber LEDs (2,700K) and forms of shielding, but I still got headaches. The Equalities Officer then used the Equalities Act to explain legal grounds for keeping sodium street lights as 'reasonable adjustment'. They agreed to keep my street and some of the surrounding streets."

## LED streetlamps ruin sleep

Traditional yellow sodium street lights are steadily being replaced by white LED lamps. LEDs use less energy. But not everyone is happy.

"When the leaves left the trees and I tried to sleep, I turned to one side and the light's shining right in my eyes."

In 2016 the city council began installing LED street lights outside the home of Karen Snyder in Washington DC. In addition to the light shining into her bedroom, the 63-year-old teacher's guest room, where she watches TV, is now bathed in something akin to strong moonlight. "It's like there's a ray coming in. Like a blue ray. Right directly on to the couch. If you are sitting down, the moon would be above the house and

**LightAware**

you'd get the beautiful feel of the moon. This is shining right in your eyes so it's pretty different than a moon."



An LED light (left) shines directly into Snyder's guest room; a sodium light glows on the other side (BBC)

Her friend, Delores Bushong, says her sleep has also been disturbed by the LED street lights outside her home. She fears they will ruin the atmosphere on her back porch, where she likes to relax after dark in a hammock in the sweltering summer months. She said: "In some kinds of torture they put a light on someone's face all the time. Am I going to be subjected to a kind of torture forever? It doesn't make sense to me. Just because we have a new technology and you can save money." Bushong wants the harsh 4,000-Kelvin bulbs in her neighbourhood to be replaced by bulbs with lower Kelvin ratings, closer in look and feel to the old high-pressure sodium bulbs.

A report by the American Medical Association (AMA) warned that the blue light emitted by first generation high-intensity LEDs, used in many cities around the world including New York, can adversely affect circadian sleep rhythms, leading to reduced duration and quality of sleep, "impaired daytime functioning" and obesity.

The AMA report called for the lowest-intensity LEDs possible and shading them better to reduce glare, which it warns can also harm wildlife.

(Brian Wheeler: "LED street lights are disturbing my sleep" BBC News, March 13 2017)

## LED adverse impacts: circadian rhythm, photochemical retinopathy in children, discomfort from blue light, flicker health

“There is some evidence that exposure to light in the late evening, including that from LED lighting and/or screens, may have an impact on the circadian rhythm.

Children have a higher sensitivity to blue light and although emissions may not be harmful, blue LEDs (between 400 nm and 500 nm) including those in toys may be very dazzling and may induce photochemical retinopathy, which is a concern especially for children below three years of age.

Older people may experience discomfort from exposure to light that is rich in blue light.

Some LEDs present potential health concerns due to temporal light modulation (flicker) at frequencies of 100 Hz and above.”

(SCHEER (Scientific Committee on Health, Environmental and Emerging Risks): “Opinion on Potential risks to human health of Light Emitting Diodes (LEDs)” European Commission, June 6 2018)

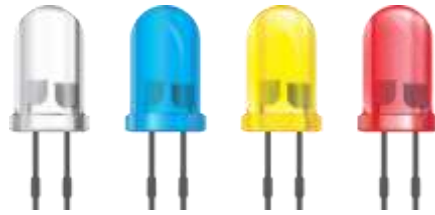


## Suffering LED lights

From “A bright idea? Adverse health, social and environmental impacts associated with LED street lighting” LightAware Report, 2021, 47 pages.

- After years of lobbying my council, they have switched some of the LED street lighting on my street back to amber sodium lights. But there's no guarantee that they will continue to do so and it hardly helps that LED lights are now almost everywhere! - *Gordon, Oxfordshire*
- Our village is in the process of changing the streetlamps to LED. The Parish Council has agreed not to change the lamp in the road where I live and plan to keep the 'old' bulbs from the lamps being changed so that there are spare supplies. - *Jennifer, East Midlands*
- The only concession was to maintain sodium in my street but this could be time limited as we don't know when suppliers will phaseout.

They've installed LED in most other parts of the borough so makes it difficult and forces me to wear hats/avoid prolonged periods walking most streets in my areas. - *Alan, London*



- I have been in very regular contact with my council for the last 8 years. They have been supportive. After long and in-depth communications and me submitting medical evidence they have agreed to keep the sodium lighting in my street and a few surrounding streets so that at least I don't have LED street lights shining into my house. They have made a commitment to keep my streets as sodium for the meantime at least. They have not been open to reconsidering the roll out of LED street lighting in general, but we are in negotiation about my area, and they are trialling some more orange coloured LED street lights to see if they are acceptable to me. - *Emily, Lancashire*



- I engaged with my council and after initially being fobbed off they accepted there were health problems and offered to make some changes locally to help me they changed the 4000k LEDs in my village for constant current, 3000k, with better quality diffusers and some with directional shields to reduce glare towards my property. The changes helped it that I can now go out at night to for example put the bins out but I still need to wear sunglasses and would try to avoid going out as this gives me the best of getting a good night's sleep. I appreciate the council did try to help me but the wider issue is that something on a national scale needs to be done. There are clearly issues with LED technology that are not understood and the drive to save energy has meant common sense has gone out of the window. - *Tom, Manchester*

30. The SCHEER report makes clear the potential adverse health effects of blue light. It is surprising therefore that councils have continued to procure street lighting with a substantial blue component, particularly when suitable alternatives are available.

36. LightAware can only conclude that councils were either unaware of the health impact of LED street lighting on their residents or saw financial savings as a higher priority.



## Recommendations

- Councils should introduce a moratorium on the roll out of LED street lighting and maintain current street lighting until it reaches the end of its useful life or until such time that safe replacements can be found. Councils should retain a supply of parts to help them maintain current street lighting.

- Where street lighting has come to the end of its economic life and needs to be upgraded, councils should consult communities about replacement street lighting, including:

- o an assessment to ensure that it meets the Public Sector Equality Duty

- o undertaking Regulatory Impact Assessments covering equalities, health, disability, and the environment

- o identifying light sensitive residents and taking steps ensure they are not socially excluded, including retaining conventional street lighting in their neighbourhood

- o in rural areas, encouraging the creation of 'Dark Skies' areas and having local referendums as to whether to have street lighting at all or to switch it off or dim it after a particular time.

- If (after public consultation and regulatory impact assessments have been completed) alternatives to LED lighting are not available, councils should retain non-LED street lighting in the neighbourhoods of light-sensitive people.

- Where LED lighting is installed, councils should be aware of, and consider current guidelines.

## Current guidelines include:

- o an upper CCT limit of

- (a) 2700K on residential roads

- (b) 2400K in eco-sensitive areas

- o flicker limits, complying with IEEE PAR1789.

- o fitting diffusers for high peak luminance

- To begin to repair damage to public health and local ecology councils should:

- o remove all street lighting with a CCT

- (c) greater than 5000K within 2 years

- (d) greater than 4000K within 5 years

- o remove all street lighting which does not

- comply with IEEE PAR 1789 within 5 years.

("A bright idea? Adverse health, social and environmental impacts associated with LED street lighting" LightAware Report, 2021, 47 pages)

# LightAware

## Streetlight pollution

Reducing light pollution has three elements:

1. Outdoor lighting should be directed where it is needed
2. Outdoor lighting should be switched on when it is needed
3. All outdoor lights should be amber-coloured, not the white/blue LEDs that disrupt the circadian rhythms of both humans and wildlife.

## LED streetlights are 'eco-destructive'

"Why are LED streetlights labelled "eco-friendly" just because they use marginally less electricity than their predecessors (LED streetlights decimating moth numbers in England, 25 August)? Reading your article about their impact on insects, bats and other wildlife, I would have thought "eco-destructive" would be more appropriate, particularly as they are not recyclable and the mining and processing of rare earth metals required for their manufacture is environmentally devastating.



They aren't too friendly to humans either. Many people contact our charity, LightAware, to complain about how they make health problems, such as migraine, much worse."

(Dr John Lincoln: "LED streetlights are far from eco-friendly" Guardian letter. August 26 2021)

### Light at night harming bats

“Our results demonstrate that only a small degree of ALAN (Artificial Light at Night) can represent a significant form of habitat degradation for some North American bats, including the endangered little brown bat. Research on the extent to which different lighting technologies, colors, and intensities affect these species is urgently needed.” (Seewagen CL et al.: “Turning to the dark side: LED light at night alters the activity and species composition of a foraging bat assemblage in the northeastern United States” *Ecol Evol.*, 2021)



### LEDs harm moth caterpillars

We found that street lighting strongly reduced moth caterpillar abundance compared with unlit sites (47% reduction in hedgerows and 33% reduction in grass margins) and affected caterpillar development. Artificial light at night (ALAN) disrupted the feeding behaviour of nocturnal caterpillars.

Negative impacts were more pronounced under white light-emitting diode (LED) street lights compared to conventional yellow sodium lamps. This indicates that ALAN and the ongoing shift toward white LEDs will have substantial consequences for insect populations and ecosystem processes.

(Boyes DH et al.: “Street lighting has detrimental impacts on local insect populations” *Sci Adv.*, 2021)

### Satellite light pollution

Over 99% of people in Europe and the U.S.A. live under light-polluted skies. Most people can't

see the Milky Way. All this artificial sky glow has real impacts, affecting everything from insect reproduction to bird migration to crop yields to human health. During the last 25 years, light pollution has increased in some areas by 400%.

The growing number of artificial satellites in low-Earth orbit are increasingly adding moving lights and diffuse glow to the night sky. Over two years to March 2021, the number of active and defunct satellites has doubled, to 5,000.

In 2020 and 2021 astronomers talked to satellite companies in two conferences, SATCON1 and SATCON2. The first recommended that satellites be no brighter than 7th-magnitude when orbiting at 500 km, putting them out of reach of naked-eye observers. Satellites at higher altitudes, where satellites are more visible for longer in the night, would need to be even dimmer. But although SpaceX has made progress in dimming its Starlink satellites, they haven't yet reached the 7th-magnitude requirement under SATCON1.

The 321 OneWeb satellites are still too bright at longer wavelengths. Jonathan McDowell of the Center for Astrophysics, Harvard & Smithsonian, says: “We need international action to preserve the space environment and the night sky.” The space lawyer Charles Mudd advocated at the conference that Earth's orbital space be considered a natural resource and regulated as an integral part of our planet's environment.

(Monica Young: “Streetlights to Satellites: Taking Light Pollution to the United Nations: The United Nations' Office of Outer Space Affairs is considering issues of light pollution spanning from streetlights to satellites” *Sky & Telescope*, October 22 2021)

## Nobel laureate virologist Luc Montagnier: co-discoverer of HIV and EMFs from DNA

The French virologist Dr Montagnier, who won the Nobel prize in 2008 for the discovery of the HIV virus, died on February 8 2022. In 2009 he published his ground-breaking study ‘Electromagnetic Signals Are Produced by Aqueous Nanostructures Derived from Bacterial DNA Sequences’. In 2010 he presented to 60 fellow Nobel laureates and 700 other scientists a method of detecting viral infection but was



criticised by some who saw parallels with homeopathic methodology. He described Benveniste as a modern Galileo but he was forced to go to China to pursue his research.

He said that ‘We find that with DNA, we cannot work at the extremely high dilutions used in homeopathy; we cannot go further than a  $10^{-18}$  dilution, or we lose the signal. But even at  $10^{-18}$ , you can calculate that there is not a single molecule of DNA left. And yet we detect a signal.’

# LEGAL CASES

## French court allows EHS person to live in her shed without planning permission

On November 26 2021, the Criminal Court of Carcassonne released Nadiane, 60, who lives somewhere in the forest in the Haute Vallée. A victim of electro-hypersensitivity that can cause her violent headaches, skin rashes and pain, she lives as a recluse, in a shed, on her 13 ha of land, with her only company, her two donkeys, in the woods, in the Upper Aude Valley. On September 10 2021, she was tried by the Criminal Court of Carcassonne for having built a makeshift house on her land, without the agreement of the Departmental Directorate of Territories and the Sea (DDTM). Nadiane can therefore stay in her shed; the court has released her.



*Nadiane in her woods (Driss Chait)*

Nadiane's lawyer, Jean Codognès, is satisfied: "I was very happy, really very happy for Nadiane, even if in the long term, it is not a solution to stay in this shed. Firstly, because it is cold. For her, it is not viable. She is, all the same, a lady of 60 years."

There was a time when everything was going well for Nadiane. "My life was magnificent, I could not hope for better" she said, with tears in her eyes. Until the first symptoms of his invisible pathology appeared. "Gradually, everything collapsed. No longer coping with the EMF, I stopped. I had a strong feeling of discomfort, headaches, aches, rashes on the body. I held on for two years before realising that, in order to save myself, I had to leave. "

("Nadiane, électrosensible, peut rester dans le cabanon" [Nadiane, electro-sensitive, can stay in the shed] Ladepeche, November 27 2021)

## France: EHS win against radiation-emitting smart meters in 2022

"This is the end of a long legal tussle, which will have lasted nearly three years, for thirteen plaintiffs suffering from electro-hypersensitivity (EHS). Suffering from various ailments (pain, digestive disorders, fatigue, insomnia, dizziness) since the installation of their Linky [smart] meter, with supporting medical certificates, the victims had won their case for the first time at the Bordeaux Tribunal de Grande Instance in 2019, then on appeal in 2020.

Sentenced to "clean up the electricity" supplied to victims with EHS, under penalty of having to pay a penalty of 500 euros per day of delay to the latter, the electricity distributor had then turned to the Court of Cassation as a last resort. Enedis was probably banking on the exhaustion of the complainants, who were reluctant to continue the procedure. However, after reading and analysing the arguments of the victims, Enedis cancelled, on January 27 2022, its appeal to avoid rejection. Enedis' conviction is therefore confirmed.

"We can only be delighted with this major step forward, which we hope will be a milestone.

However, this is a stage victory, and we must obtain not only the depollution of EHS housing, but

also the replacement of their improperly installed Linky [smart] meters with non-communicating meters. By extension, these measures should be applicable to any user, even non-EHS, who request them", comments Patrice Goyaud, secretary of the Robin des Toits association."

("Joint press release of January 27 2022 from lexprecia and Robin des Toits: EHS-Linky VS Enedis case in cassation at the Bordeaux court: Enedis throws in the towel before the 3rd round" Robin des Toits, January 27 2022; Nihel Amarni:"Linky: ENEDIS withdraws in cassation" Alternative Health, January 27 2022; Deepak Gupta: "Linky: electrosensitive people win their case against Enedis condemned to "clean up electricity"" Tech Unwrapped, January 28 2022; "France: Linky: Electrosensitive People Win their Case against Enedis Condemned to "Clean Up Electricity"" TBH, January 30 2022)



## Disability recognition of EHS: Canada

David McRobert, an environmental lawyer based in southern Ontario and retired Adjunct Professor, has written a useful two-part review of the legal situation in the recognition of EHS disability rights in Canada.

“Electromagnetic hypersensitivity (EHS) is explicitly recognized as a disability in many nations. However, individuals with EHS who make disability claims often are not accommodated by employers or service providers and tend to have limited success in the legal system. This paper provides an analysis of legal protections available in Canada for those living with EHS, and discusses the relationship between law, scientific advances, and the role of metapolicy in developing preventative policies that protect vulnerable persons and overall populations. The paper deals with, amongst other things, the role played by medical professionals in providing accommodation for EHS.”



Kingston Library Notice of Wi-Fi Free Zone (Fig. 2)

“We must start to build a social consensus through advocacy, research and education. Education will be essential. We must come to a common understanding that sensitivities arise from EMF and EMR, in order best to prevent and to treat conditions such as EHS. If our efforts and demands are seen as reasonable and carefully formulated, the courts and legislatures will respond. In the short term, EHS sufferers and their lawyers also need to consider how to develop practical options on accommodations that are not perceived as completely trumping other interests such as the desire for access to the internet.”

(McRobert D: “Using Law and Advocacy to win Accommodations for Clients with Electromagnetic Hypersensitivity (EHS) 1, 2” Ontario Bar Association, 2021)



## EHS diplomat sues for disability discrimination

On December 8 2021, Mark Lenzi, a US diplomat who developed EHS or ‘Havana Syndrome’ in Guangzhou, China, in 2017, filed a lawsuit against Secretary of State Antony Blinken and the US State Department alleging disability discrimination. The syndrome now widely seen as an injury from pulsed RFR, the same as EHS from commercial wireless RFR.

Lenzi, his wife and children began experiencing “sudden and unexplained mental and physical symptoms, including headaches, lightheadedness, nausea, nosebleeds, sleeplessness, and memory loss” around November 2017. In June 2018 Lenzi and his wife took the Havana Acquired Brain Injury Test (HABIT). Both had brain injury symptoms consistent with exposure to RFR and he was officially diagnosed at the University of Pennsylvania with an ‘acquired brain injury/concussion’.

Lenzi’s lawsuit alleges that the State Department failed to provide him with reasonable accommodation in violation of section 501 of the Rehabilitation Act and he received less support than US employees injured by RFR in Havana in 2016. He also claimed that the State Department retaliated against him for an email sent to colleagues “warning them about the potential danger to their health and safety.”

The diplomats’ EHS creates a problem for the US government. If the diplomats are sick from pulsed RFR, then how can the government continue to deny the sickness from wireless technology? In the Pennsylvania Supreme Court regarding the smart meter mandate, Justice Kevin M. Dougherty connected EHS from smart meters and the “Havana syndrome.”

(Katie Bo Lillis and Natasha Bertrand: “State Department officer struck by Havana syndrome sues Blinken and agency for alleged disability discrimination” CNN, December 10 2021; Dafna Tachover: “Diplomat Injured By RF, Sues Government for Disability Discrimination” December 13 2021)

## US Pittsfield voted to issue a 'cease and desist' for cell tower after ES complaints

The city of Pittsfield Board of Health in Massachusetts, USA, on February 2 2022 unanimously agreed to send Verizon a cease and desist order if it did not discuss removing its cell tower at 877 South Street. It was to be held in abeyance for seven days. If Verizon did not agree to have a meeting with the board and show a desire to cooperate to the board's satisfaction, it would go into effect.



Board members acknowledged that this action was a long shot and would be expensive to the city if it had to go to court, but they said they felt it was their duty to do everything they could to protect the health of residents.

The 115-foot tower was activated in September 2021 and, shortly thereafter, according to residents, especially on Alma Street, which is the closest to the tower, the health problems started, including headaches, nausea and ringing in the ears. Many residents said they were experiencing symptoms they never had before. "My symptoms are ongoing and have worsened," said Elaine Ireland, a neighbourhood resident. "I never was one to have headaches before. I'm getting regular headaches, ringing in the ears that, it gets in the way of everyday life."

One family sold their home and moved out. Courtney Gilardi, who has been leading the neighbourhood's efforts against the tower for the past 17 months, and her family have been living out of a temporary cottage a few miles down the road for months to find relief. "Last night, when we came home from the meeting, my little one said, 'Mama, I actually don't remember what it's like to live in our own house.' And it broke my heart to hear that from her," said Gilardi. "For months after the cell tower started transmission, we were sick in our own homes. I watched my children vomit in their beds."

Gilardi's teenage daughter, Amelia Coco Gilardi, told the board in October 2021: "After seven months of living out of a suitcase because I can't live in my own home, I just want to go home and be safe in my room again." The Gilardis said that since the tower was brought online, there has been an increase in the number of cancer cases among neighbours.

One resident who abuts the tower reported having unexplained tinnitus from the EMF. "It is just very disruptive to our neighbourhood, even if they're getting sick or not, they're kind of worrying, thinking 'is this going to happen to me next?' because it took a little while before mine kicked in," he said.

A legal handbook for Massachusetts boards of health of 2020 states on cell tower radiation: "the fact that towers are ubiquitous must not be confused with the presumption that they do not present certain health risks."



Member Steve Smith pointed to the role of the panel, stating that even if the battle is lost, he would like to know he made every action he could. "As a member of the Board of Health, I'm here to safeguard the health of residents of the city of Pittsfield," he said. "At some point, I'm going to have to sit back 20 years later and say, did I do everything I could to safeguard the residents in Pittsfield when I was in that position or did I not?"

The Board of Health held two meetings with Verizon. Verizon stated that it would not move the tower and would not power it down.

(Brittany Polito: "Pittsfield Health Board Ordering Verizon to Remove Cell Tower" iBerkshires.com, February 2 2022; Matt Ristaino: "Pittsfield Board of Health votes to send cease and desist order to Verizon for cell tower" Spectrum News 1, February 3 2022; EHT: "Pittsfield, MA Board of Health unanimously votes to issue cease and desist for Verizon cell tower" February 3 2022; Dick Lindsay: "Pittsfield Board of Health asks Verizon to remove or relocate controversial South Street cell tower" The Berkshire Eagle, Oct. 7 2021)

**Electrosensitivity (ES) or Electromagnetic-Hypersensitivity (EHS)** is a physical intolerance. It can develop from exposure to e.g. mobile and cordless phones, masts, WiFi, smart meters, CFLs, LEDs, TETRA, powerlines.

- **Common symptoms:** headaches, skin problems, insomnia, fatigue, anxiety, memory loss, confusion, muscle pain, heart palpitation, irritability, cancer, nausea, nosebleed, chemical/light sensitivity, tinnitus, imbalance.
- **The key treatment is avoiding radiation** (e.g. masts, WiFi, smart meters, mobiles) especially in bedrooms. Some EHS use military-style shielding or protective clothing, or live far from man-made radiation if they can.
- **Mechanisms:** e.g. cryptochrome, demyelination, Hsp70, retrovirus, ROS, subtle energy, vagal nerve, VGCC.
- 1.2% (804,000 in UK) has **severe sensitivity**, 4% (2.7m) **moderate sensitivity** (UK government-sponsored surveys), 80% **conscious sensitivity** (e.g. chronic inflammation), and 100% **subconscious sensitivity**.
- **The World Health Organization** classifies **Electrosensitivity** as an **Environmental Intolerance (IEI-EMF)** and states that it can be disabling, but its Backgrounder 296 (2005) is outdated and wrong on aetiology.
- **ICD-10 codes:** ICD-10-CM: W90.0 – Radio Frequency Radiation (RFR); ICD-10-CM: W90.8 – ELF ([link](#)).
- **Diagnosis of ES/EHS**, by some NHS hospitals, consultants and GPs since 2012, includes: clinical history of EMF sensitivity/exposure, 3d fMRI, cerebral blood perfusion scans (UCTS), DNA, H, HRV, Hsp, MT, sAA, TSH.
- **Related conditions** include Chemical and Light Sensitivity, Electrical injury, ALS, cancers, CFS/ME, MS, etc.
- **Employers have removed Wifi/mobiles** for ES people since 2006 (H&S At Work 1974, Equality Act 2010).
- **UK tribunals and courts have recognised EHS as a disability** from 2012, and awarded compensation.
- **Local Councils** are required to 'improve public health' (NHS Act 2006), NPPF 2021 (8b,92,93, despite 118).
- **The WHO's IARC** classifies EMFs, ELF & Radio Frequency, as **2B possible human carcinogens** (2001/11).
- Experts (2013 on): RFR should be **classified as a class 1 known carcinogen**, first shown in 1953.
- **Non-thermal effects of RFR are primary**, with heating a secondary consequence, established in the 1930s.
- **Non-thermal RFR and EMFs can cause oxidative stress, DNA damage and cancer**, as well as ES/ EHS.
- **Non-thermal RFR guidelines were the first guidelines produced**, in 1935.
- **Bioinitiative, IGNIR etc give long-term non-thermal guidelines.** ICNIRP's short-term heating limits are obsolete.
- **The ICNIRP and WHO EMF Project** are a minority-viewpoint cartel following Schwan's 1953 heating mistake and thus supporting the wireless industry. They still deny adverse non-thermal effects established since 1733.
- **Governments and armies use RFR weapons** (since 1945) to cause ES symptoms, e.g. Middle East wars.
- **Underwriters refuse to insure RFR and EMF** (since 1990s), except like other high-risk carcinogens e.g. asbestos.
- **Electrosensitivity was first described in 1733** and EHS in 1746. In 1932 EHS was shown in electrical, radio and radar workers. Now, with more radio, severe EHS affects 1.2% and moderate EHS 4.0% of the population.
- **People vulnerable to RF below heating limits** are recognised: ANSI (USASI) in 1966, and ICNIRP in 2002.
- **Research into ES** began in 1730 (Royal Society London). Centres include ARTAC Paris, Breakspear Herts, EMC Dallas, US DARPA Caltech, HUSM Lleida, CES Moscow, UC San Diego, Toronto WCH, JMU Virginia.
- **The different condition of psychological Electrophobia (EPH)**, nocebo effect, IEI-EMF), known since 1903, affects 1% of EHS people. EPH's prior conditioning cannot apply to EHS children and unaware adults.

#### Electrosensitivity UK (ES-UK)

[www.es-uk.info](http://www.es-uk.info)

**Aims:** 1. To help people suffering from Electrosensitivity (ES).  
2. To educate the public about ES and related areas.  
*Registered Charity No.: 1103018*  
*Founded 2003*  
BM Box ES-UK, London, WC1N 3XX  
Telephone: 0845 643 9748  
[enquirers@es-uk.info](mailto:enquirers@es-uk.info)

#### Support ES-UK

Paypal (on the website)  
Cheques to: Electrosensitivity UK, to:  
The Treasurer, BM Box ES-UK, London,  
WC1N 3XX  
*from whom you can obtain Standing Order,  
Direct Debit, Gift Aid and Legacy  
declaration forms.*  
Please donate £20 or more per year for  
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#### Resources available at: [www.es-uk.info](http://www.es-uk.info)

- [Letters](#) to doctors and psychiatrists on Electrosensitivity, by Dr Andrew Tresidder
- [ES-UK Leaflet](#) (right)
- [Resources: Disability, Guidelines, Housing, Planning, Public Health, Shielding.](#)
- [ES Directory](#): (suppliers)
- [ES and EHS: A Summary](#) (2013)
- Past [Newsletters](#)
- [Selected ES and EHS Studies](#) (list with links)



#### Newsletter:

Thanks to Sarah Dacre for organising the mailing.

Please send contributions to [editor@es-uk.info](mailto:editor@es-uk.info) or  
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