

EMR and Health

Report on electromagnetic radiation, health and well-being

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World-first legal judgement on EHS

For the first time, a UK court has recognised that WiFi in schools can cause problems for students.

In a precedent-setting decision, the Upper Tribunal of the Administrative Appeals Chamber (Sussex) determined that educators would need to accommodate a student who was intolerant of WiFi and other electromagnetic fields.

The decision is believed to be the first in the world in which a government has ordered an education authority to accommodate a child with electromagnetic hypersensitivity (EHS).

EHS is the experience of unpleasant symptoms – such as headaches, sleep problems, fatigue, concentration and memory problems, nausea and digestive problems, pain, behaviour problems, depression and anxiety – when a person is exposed to electromagnetic fields.

The unnamed thirteen-year-old girl developed debilitating symptoms, including headaches and insomnia, after WiFi was installed in her school. As a result, she was unable to attend the school and lost a year of her education.



'Our daughter was put through misery that no child should have to go through,' her parents said.

The court was convinced that the girl's problems were caused by electromagnetic fields. An earlier court said, 'There was evidence from two educational psychologists both of whom found her and her parents credible in describing her symptoms. The tribunal (paragraph 47) accepted their evidence too and described her symptoms as "debilitating when they occur", which they did to such an extent that she "was out of education for a whole academic year." Those symptoms were not unique to a school environment. But when they occurred in that environment they arose from the school's choice of the

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Wireless radiation and hearing problems

Did you know that some people can hear wireless radiation?

We know that some of our readers do, and you might be one of them.

Recently Dr James Lin published a paper describing the fascinating phenomenon of 'microwave hearing', whereby people perceive wireless radiation as a clicking, buzzing, zipping, chirping or knocking sound, or even as a tune. It can occur when subjects are exposed to a wide range of frequencies – from hundreds of megahertz to several gigahertz. Further, it occurs, not just in humans, but in some species of animals (such as rats) as well.

Microwave hearing is not the hearing of sound (which is a different range of frequencies from wireless radiation). It does not occur in the way that conventional hearing does.

Lin describes it this way. 'The microwave auditory effect occurs from miniscule but rapid rise ... of temperature ... in the brain from absorption of pulsed microwave radiation. The sudden rise in temperature creates thermoelastic expansion of the brain matter, which can launch a pressure wave that propagates through the head and is detected by the sensory hair cells in the cochlea. The nerve signal is then relayed to the central auditory system for perception and recognition.'

According to Lin, the sound depends on the characteristics of the wireless radiation, for example, the width of the pulses.

'The microwave auditory effect occurs from miniscule but rapid rise ... of temperature ... in the brain from absorption of pulsed microwave radiation'

Microwave hearing was first recognised in World War II and was usually linked to radar signals. It was found that servicemen could hear sounds from radar whether they were inches or thousands of feet away from the transmitter. It was also discovered that shielding a hearer from the radiation stopped them from perceiving the sound.

Lin says, 'Since late 2016, there have been multiple reports that some diplomatic service personnel have been experiencing health issues associated with hearing loud buzzing or bursts of sound. It was hypothesized that the loud buzzing, burst of sound, or acoustic pressure waves may have been delivered using a targeted beam of high-power pulsed microwave radiation, rather than blasting the subjects with conventional sonic sources. Recently, the National Academies released a report, examining the causes of the illnesses, makes the point that "among the mechanisms the study committee considered, the most plausible mechanism to explain these cases, especially in individuals with distinct early symptoms, appears to be directed, pulsed RF (microwave) energy."'



He points out that the US government plans to undertake research into developing a wearable device for detecting exposure to RF weapons.

Can microwave hearing be a problem for those who experience it?

According to Lin it can. Because the radiation is converted to sound inside the brain, it is possible that injury to the brain could occur, he says.

J. C. Lin, "The Microwave Auditory Effect," in *IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology*, vol. 6, no. 1, pp. 16-28, March 2022, [doi: 10.1109/JERM.2021.3062826](https://doi.org/10.1109/JERM.2021.3062826);

Do you have these symptoms?

Did you know that being exposed to electromagnetic fields can cause people to develop unpleasant symptoms? Perhaps you're one of them.

In a new paper, Professor Dominique Belpomme and Dr Philippe Irigaray from the Association for the Research and Treatment Against Cancer (ARTAC) in Paris, explain what these symptoms are and how we know they're caused by exposure to electromagnetic fields.

Belpomme and Irigaray say that electromagnetic fields from electrical and wireless sources can trigger harmful symptoms in some people and this is usually known as electromagnetic hypersensitivity (EHS). '... we believe that present scientific knowledge strongly suggests that man-made EMF exposure can be causally involved in triggering harmful adverse clinical symptoms and noxious pathophysiological changes in EHS patients ...'

Among the many symptoms the authors identified are:

- heart rate variability
- changes to pupillary light reflex
- attention problems and memory loss
- sleep problems
- changes to EEG and ECG
- skin changes
- mental confusion
- chronic fatigue
- depression and suicide risk
- blood and brain changes.

The authors reported that electromagnetic hypersensitivity is linked with multiple chemical sensitivity (MCS) and that about a quarter of EHS patients had MCS as well. They say that 'both disorders are associated with inflammation, OS [oxidative stress], possible BBB [blood-brain barrier] opening and brain neurotransmitter changes'.

Chemicals may even cause EHS in some cases, the authors say.

Authorities have sometimes argued that EHS is not caused by exposure to electromagnetic fields or is a nocebo effect (has a psychological cause).

But that's not the case, say Belpomme and Irigaray. 'From the analysis of our data and those of the scientific literature, we now consider several strong and convincing arguments that prove EHS is caused by non-thermal anthropogenic [environmental] EMF exposure.'

Here are some of them.

- Exposure causes physical changes in the body and is linked with MCS, which is considered to be a somatic (physical) and not psychological condition.
- Its presence coincides historically with the arrival and expansion of EMF-emitting technologies in the world.

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- Studies show that exposure can ‘biologically damage the organism and are noxious agents in healthy people’.
- Studies show that some symptoms worsen with increased exposure.
- EHS symptoms have been found in exposed animals, so can’t be psychological.
- Studies show that man-made fields interact with fields that control biological functions of the body (eg heart and brain).
- Exposure has been shown to affect DNA and could affect genes and protein folding.

‘All these different findings clearly argue for a causal role of EMF in inducing EHS directly or Indirectly via ROS [reactive oxygen species] and/or RNS,’ they authors say.

Dominique Belpomme, Philippe Irigaray, Why electrohypersensitivity and related symptoms are caused by non-ionizing man-made electromagnetic fields: An overview and medical assessment, Environmental Research, Volume 212, Part A, 2022, 113374, ISSN 0013-9351, <https://doi.org/10.1016/j.envr...>;

What are our bacteria trying to tell us?

What have WiFi, 5G and the bacteria that are probably on your skin and in your nose got to do with each other?

Believe it or not, they all emit radiofrequency radiation.

A recent US study discovered that *Staphylococcus aureus* bacteria – which are commonly found on the skin and in the nose – communicate using signals in the 3.18 GHz and 3.45 GHz bands of the radiofrequency (wireless) spectrum. These are the same parts of the spectrum used by WiFi and some 5G technologies.

The authors used a sensitive measuring system to detect radiation in the 1 to 50 GHz frequency range from *Staphylococcus aureus* biofilms over a 70-day period. They observed the most ‘notable’ radiation in the 3-4 GHz frequency band. They say that their findings could help demystify how cells communicate.

A biofilm is a colony of microorganisms or microbes (including bacteria) that adhere to each other. They are ubiquitous life forms that are associated with infection and disease.

The findings of this study suggest that, because *Staphylococcus aureus* bacteria appear to communicate using 3-4 GHz signals, they could well be impacted by the 3-4 GHz signals from man-made technologies.

‘Just imagine what our man-made high-frequency signals, used by cell phones, wireless smart meters, WiFi systems, wireless baby alarms, DECT phones, and many more gadgets/installations/systems, delivered at colossal power levels compared to the natural ones, may do to these intricate communicative mechanisms,’ says Associate Professor Olle Johansson, commenting on the findings.

What is the relevance of these findings to humans?

Science has shown that ‘the human body contains trillions of microorganisms — outnumbering human cells by 10 to 1’ and that ‘this plethora of microbes contribute more genes responsible for human survival than humans contribute’. In other words, what happens to the body’s microbes, affects the body’s function and health.

‘Perhaps it is high time to start de-smarting our life and our environment, and instead start listening carefully to our bacteria,’ says Johansson.

M. Rao, K. Sarabandi, J. Soukar, N. A. Kotov and J. S. VanEpps, "Experimental Evidence of Radio Frequency Radiation From *Staphylococcus aureus* Biofilms," in *IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology*, doi: 10.1109/JERM.2022.3168618 ; Johansson O, "Our bacteria: are they trying to tell us something?" [Newsvoice.se 20/6, 2022](#); National Institutes of Health, 'NIH Human Microbiome Project defines normal bacterial makeup of the body,' [News Release](#), 13.6.2012.

Mould problems?

Mould seems to be a growing problem – literally – especially in the wet conditions we've had during the past year. Maybe it's present in your home, too.

As most of us know, mould is not conducive to good health and is commonly linked with problems such as coughing, wheezing, nose stuffiness, red or itchy eyes, skin rash, and sore throat, asthma attacks, and breathing problems for people with respiratory problems.

But that's not all.

According to Dr William Rea, the health problems some patients develop from mould exposures can even be disabling.

In 2018, Rea published the results of a study on 100 patients who were sensitive to chemicals and chronically exposed to mould. Their symptoms were such that they continued to suffer even after being removed from the mould.

In the patients he tested, he found that:

- more than 80% had abnormal T and B cells of the immune system
- 64% had respiratory problems
- 70% had signs of neurological dysfunction, including memory problems, concentration problems and problems of hand-eye co-ordination
- and almost all had problems of the autonomic nervous system.

Rea, who specialised in treating people with environmental sensitivities at the Integrative Environmental Health Center in Dallas, explained why mould can be such a problem for some people. '(M)old toxins—the mycotoxins—are loaded with endocrine disruptors', he said in an interview published in the journal Integrative Medicine (Encinitas).

How should people deal with it? 'The first thing is get rid of the mold patch from the house or the building they work in,' he said. Rea also developed a treatment protocol for mould patients at his clinic.

Mould can be especially problematic for people with other environmental sensitivities. Many people with mould problems tell us that they are particularly sensitive to electromagnetic fields as well. So reducing exposure to mould can be helpful for people who are sensitive to these fields.

We are pleased to say that we now have a product that can help deal with mould problems. It's called [Zeo-Go](#) and can be used as follows:

- Fill muslin bag with Zeo-Go and tie it closed.
- Hang in a cupboard or place on a shelf and leave.
- If the musty or mouldy smell returns, it's time to recharge the zeolite. To do this:

empty zeolite onto a tray

leave in direct sunlight for 4 to 5 hours,

return to the muslin bag and replace in room.



The Zeo-Go can be recharged this way indefinitely.

Rea, William. (2018). A Large Case-series of Successful Treatment of Patients Exposed to Mold and Mycotoxin. *Clinical Therapeutics*. 40. [10.1016/j.clinthera.2018.05.003](https://doi.org/10.1016/j.clinthera.2018.05.003); Gustafson C. William Rea, md: Investigating Environmental Sensitivities May Resolve "Uncurable" Illness. *Integr Med (Encinitas)*. 2016 Mar;15(1):24-6. PMID: 27053932; [PMCID: PMC4818065](https://pubmed.ncbi.nlm.nih.gov/27053932/).

Fast speed 5G—the hidden risks

In a discussion paper published in July, Dr Maisch explains that faster download rates offered by 5G technologies may have health consequences that most people are not aware of.

The telecommunication industry seduces us with promises of being able to download more and more, faster and faster. Already Telstra offers ‘ridiculously fast’ internet and Optus, speeds that are ‘faster than fast’.

But get ready for speeds that are even faster. The Global System Mobile association (GSMA) predicts that 5G will give us download speeds of at least 20 Gigabits (Gbps) per second. These faster speeds will come with the use of 5G millimetre waves (30 – 300 GHz) – which are not yet in common use in Australia.

Now here’s the problem. Speeds of 10 Gbps and more are likely to cause damaging signals in the body known as Brillouin precursors. Maisch explains that, when sharp pulses enter the body, they excite charged molecules (such as potassium) causing them to emit signals as well.

It’s an electrical dominoes effect that results in the body being exposed to more than the original signal.

According to Maisch, ‘This additional radiation adds large spikes onto the leading and trailing edges of the original EMR pulse. The sharp transients, called ‘Brillouin Precursors’ increase the strength of the original signal and reradiate EMR waves deeper into the body than predicted by conventional thermal models.’

So effective is their ability to penetrate objects, that imaging technologies utilising Brillouin precursors can locate objects deep underground, for example.

What is the effect of these Brillouin precursors in the body?

Well, nobody knows for sure because it’s not a topic that’s being discussed in the open scientific literature, though it does appear to have been investigated by the United States Air Force.

Professor Kurt Oughstun, who extensively studied Brillouin precursors, told Maisch he thought the effects on humans could ‘be worrisome’.

As early as 2002, Oughstun told *Microwave News* that Brillouin precursors could damage tissues of the body in four ways. ‘These are changes in the conformation of molecules, changes in the rates of chemical reactions, effects on membranes and thermal damage.’ He explained that these precursors could open channels in the cell membrane and potentially cause leakage of the blood-brain barrier.

What we also know is that the Australian standard and international guidelines set by the International Commission of Nonionizing Radiation Protection (ICNIRP) don’t protect from Brillouin precursors in the body because, Maisch says, ‘ICNIRP does not take it into consideration.’

We have to wonder whether rolling out a technology that will expose all life forms on this planet to Brillouin Precursors is really the best way to find out about how safe they really are.

The “take-home” message,’ Maisch says, ‘is that we still do not have adequate research on 5G millimetre waves to be able to assure the public that the many thousands of 5G antennas, in many instances placed in close proximity to homes and workplaces, are without a possible health risk because the necessary research has not yet been conducted.’

Don Maisch PhD, ‘Brillouin Precursors, a theoretical oddity or a real concern for 5G millimetre-wave bands to be used in future high-speed telecommunications?’, [Discussion Paper](#), July 21, 2022; ‘Introducing Brillouin Precursors: [Microwave Radiation Runs Deep](#)’ [Microwave News Mar/April 2002](#).

Emotional and behavioural problems—could your wireless device be a trigger?

Depression, anxiety, irritability, inattention, stress – are these problems that you or someone close to you experiences?

Did you know that wireless devices could be contributing to these and other emotional and behavioural problems, too?

Studies have shown that wireless radiation can have harmful effects on the brain and nervous system. It's been found to affect neurotransmitters that are involved in psychiatric disorders, stress, attention/concentration, irritability, sleep, mood, regulating emotion and depression.

Children exposed to mobile phone radiation seem to have more than their fair share of behaviour problems. A Korean study found that children who made the most calls on their mobile phones or who spent the most time playing games on their mobile phones had more chance of developing ADHD. A Danish study found that children whose mothers used mobile phones before and after giving birth were 50 percent more likely to have behavioural problems. Even mice exposed to mobile phone radiation developed behaviours consistent with hyperactivity.

Interestingly, one Sydney High School reported that, after it banned students' use of mobile phones at schools, teachers observed 'a dramatic decrease in behavioural issues, and a boost in physical activity.'

It's not just mobile phones that are causing these problems. So is heavy use of the internet. Research has shown that internet addiction is related to depression, anxiety, impulsivity and reduced psychological wellbeing. Moreover, it's been shown to cause structural changes in the brain in areas responsible for behaviour, personality and regulating emotions.

Dr Nick Kardaras, author of *Glow Kids: how screen addiction is hijacking our kids – and how to break the trance* says that using wireless devices at school can interfere with kids' ability to pay attention and cause a host of other problems. And Professor David Levy of the University of Washington refers to the 'popcorn brain' to describe a brain so used to stimulation that it can no longer function at a normal pace.

Emotional and behavioural problems can cause enormous stress in families. Reducing triggers such as wireless radiation and wireless device use is important for overcoming the problem and creating a healthy emotional life.

You can hear me talk about emotional and behavioural problems and wireless radiation in an interview with Kerre Burley [here](#). Kerre is CEO of The Goulding Process and teaches families tools for overcoming dysfunctional behaviours



Mobile phone protection



Wavewall mobile phone cases protect the head, body and the phone



Airtube headsets—no wire to conduct radiation into the head

'wireless radiation can have harmful effects on the brain and nervous system ... neurotransmitters that are involved in psychiatric disorders, stress, attention/concentration, irritability, sleep, mood, regulating emotion and depression'

(Continued from page 1)

medium for providing education. In those circumstances, some provision is required to render the education effective.'

After five years of legal battles, the Appeals court found in favour of the parents when Judge Edward Jacobs announced his decision that 'the local authority must secure that an EHC [Education Health Care] plan is prepared and maintained for the child'.

Judge Edwards determined that the child was disabled. 'The child's problem with electro-magnetic radiation affects her life generally and limits her normal day-to-day activities – the Equality Act test.' He further said, 'her problems with communication and making use of the computers are a direct result of the use of wifi in schools. The only solution available has to be provided in the school.' As a result, he said, 'I find that the child requires special educational provision.'

The girl described her experience of living with EHS. 'EHS has dramatically affected my life, but maybe not in the ways you might think. Of course there are places I can't go, or things I don't have, but I live a very "normal" life in most ways. I can message my friends through email or Skype on a hardwired system as long as I don't spend too long and I can go to school now that I have one without Wi-fi and mobile phones. Some people have more severe EHS and can't do these things that most take for granted. I appreciate how much they suffer, but believe that even those people, can recover in a low EMF environment. I can feel things and sense things most people can't. This has protected my health, and I like to think of it as a superpower. Of course sometimes, when I can't sleep, or can't go to school, it doesn't feel like that, but in my stronger states, I recognise that it is kind of amazing. I have previously been unable to go to school, as the school I went to put in WiFi, but people fought for me, comforted me, and welcomed me, despite how weird or crazy our situation may have been. These people were my family, my friends, teachers and sometimes near strangers, and they didn't just fight for me, but for anyone and everyone with EHS. They are the people we need more of, those with open minds and hearts. Thank you, to all of them. If you have EHS, and are struggling to stay in good health, or can't go to school, or work, don't give up, because everything will get better. People are becoming more aware of this condition, and even if right now it seems like nothing will ever change, it already is.'

The parents are hopeful that the court's findings will benefit other students with EHS. They said, 'Legal recognition that some children can be adversely affected by these exposures in a serious and debilitating way, is the first step to making schools healthier for all pupils in our digital age and allowing equal opportunities for those who are acutely affected.'

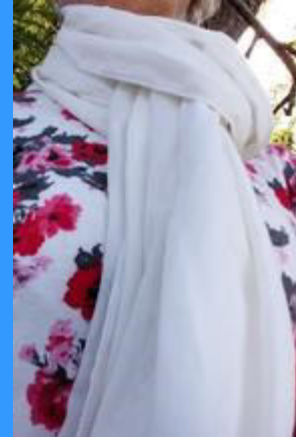
References: Physicians Health Initiative for Radiation and Environment, [Media release](#).

THE UPPER TRIBUNAL (ADMINISTRATIVE APPEALS CHAMBER) UPPER TRIBUNAL [CASE NO: UA-2022-000328](#)-HS [2022] UKUT 193 (AAC) EAM V EAST SUSSEX COUNTY COUNCIL.

Protect the body
from wireless
radiation



Shielding singlets for
kids; head protection;
shielded scarves



'her problems with communication and making use of the computers are a direct result of the use of wifi in schools'