

Documentary Explores Electromagnetic Hypersensitivity Syndrome

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STORY AT-A-GLANCE

- › “Wi-Fi Refugees” investigates the struggles reported by people who claim to suffer from electromagnetic hypersensitivity syndrome (EHS) – a condition in which sufferers claim EMFs affect their health and well-being
- › Commonly reported symptoms of EHS include skin itch/rash/flushing/burning and/or tingling; confusion/poor concentration, and/or memory loss; fatigue and muscle weakness; headache; chest pain and heart problems
- › Many EHS sufferers have a certain gene that inhibits detoxification, making them slow detoxifiers. Oftentimes, those suffering from EHS will also be highly sensitive to chemicals
- › Dr. Dominique Belpomme, a French oncologist, conducted a study on 700 individuals with EHS, showing they suffered immune system damage and nervous system damage
- › Belpomme has also established a number of other biomarkers for EHS. However, this kind of information has yet to pervade the medical field, and many are still unaware of these medical advancements

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Electromagnetic fields (EMFs) are all around us, no matter where you live these days. They emanate from power lines, televisions, household electrical wiring, appliances and microwaves. Then you have the information-carrying radio waves of cellphones,

cellphone towers and wireless internet connections and a whole host of other wireless gadgets.

For some, the effects of EMFs are unmistakable and undeniable. The RT documentary "Wi-Fi Refugees" investigates the struggles reported by people who claim to suffer from **electromagnetic hypersensitivity syndrome (EHS)** – a condition in which sufferers claim EMFs affect their health and well-being.

The video features several such individuals, including Sue Howard, who used to spend most of her time in a specially-constructed shielded room, as EMFs cause a burning sensation in her skin.

Ida Pardo, another EHS sufferer, says she's spent between \$10,000 and \$20,000 per year for the last four years on medical evaluations and treatments for her symptoms. "Most of my savings have been put toward trying to figure out what was wrong with me and gain my health back," she says. Oftentimes, it can take years before the cause is identified.

While the film claims there's no known test that can diagnose EHS, this isn't entirely accurate. Some researchers have indeed shown the effects of EHS are biologically recognizable, and lab tests can in fact be done to show biological impairment is occurring during EMF exposure.

For example, Dr. Dominique Belpomme, a French oncologist, conducted a study on 700 individuals with EHS, showing they suffered immune system damage and nervous system damage.¹ He also established a number of other biomarkers for EHS. However, this kind of information has yet to pervade the medical field, and many are still unaware of these medical advancements.

Symptoms of Electrohypersensitivity

While symptoms may vary from one individual to another, some of the most commonly reported symptoms of EHS are:

1. Skin itch/rash/flushing/burning and/or tingling
2. Confusion/poor concentration and/or memory loss
3. Fatigue and muscle weakness
4. Headache
5. Chest pain and heart problems

Many describe a "burning pins and needles" kind of pain, especially in the head and chest area. Jennifer Wood, a professional architect interviewed in the film, describes feeling like her detoxification system simply shut down, causing a whole-body kind of toxic nausea that felt very different and distinct from the nausea felt when she'd come down with an actual virus or food-related illness. Other reported symptoms include:

Ear pain	Panic attacks
Insomnia	Seizures
Tinnitus (ringing in the ears)	Feeling a vibration in the body
Paralysis	Unrelenting dizziness

Some Are More Susceptible to EHS Than Others

In the film, professor David Carpenter, director of the Institute for Health and the Environment, discusses some of the scientific evidence showing health effects from EMFs, starting with the launch of early radar systems.

"Military people involved in radar work got into the radar beam and got an excessive exposure. And there are some 10 or 12 reports of individuals [who were] perfectly healthy before that sudden exposure, [who] after that exposure suffered from constant headaches, from photophobia – they couldn't stand being in the presence of light; they felt their brain wasn't working right. It's classic hyperelectrosensitivity," he says.

Wood notes that many EHS sufferers have a certain gene that inhibits detoxification, making them slow detoxifiers. Indeed, in her book "The Electrical Sensitivity Handbook,"² Lucinda Grant³ compares EHS to that of multiple chemical sensitivity (MCS), which is an apt comparison. Even worse though would be defects in the genes for the voltage gated calcium channels, CACNA1C.

Although it is not mentioned in the 2-year-old video, more recent work shows that those with genetic variants in voltage gated calcium channels (VGCCs) also appear to suffer from EHS at a much greater rate. This makes sense when one considers that the VGCCs are likely how EMFs damage your body.

Oftentimes, those suffering from EHS will also be highly sensitive to chemicals or have MCS.⁴ This makes logical sense since your nervous system is a primary site impacted by both chemicals and electromagnetic fields, and if your nervous system has been damaged from toxic exposures, it may render you more susceptible to EHS as well.

Dr. Yoshiaki Omura's research⁵ shows that the more your system is **contaminated with heavy metals** from silver amalgam fillings, eating contaminated fish, living downstream from coal burning power plants and so forth, the more your body becomes a virtual antenna that actually concentrates radiation, making it far more destructive. Other at-risk groups for developing EHS include those with:

- Spinal cord damage; whiplash; brain damage or concussion
- Impaired immune function; lupus or chronic fatigue syndrome (CFS)
- Bacterial and/or parasitic infections such as Lyme
- The very young and the very old
- Tinnitus — Evidence actually hints at a shared pathophysiology between EHS and tinnitus.⁶ In this study, nearly 51% of EMF hypersensitive patients had tinnitus, compared to just 17.5% of controls.

As an interesting aside: Earlier this year I had a construction leak in my home that caused some mold damage. I had mold remediation performed and the foreman had suffered with tinnitus for over 15 years. He was also sensitive to mold.

I immediately recognized that as a common symptom of EMF sensitivity so I took him into my bedroom, which has very low levels of radiofrequency and electric fields. It was the first time in 15 years that his ringing disappeared. It was a powerful experience for him and motivated him to radically reduce his EMF exposure.

According to the authors of this study: "An individual vulnerability probably due to an overactivated cortical distress network seems to be responsible for both electromagnetic hypersensitivity and tinnitus. Hence, therapeutic efforts should focus on treatment strategies (e.g., cognitive behavioral therapy) aiming at normalizing this dysfunctional distress network."

Grant works with a lot of children with EHS, among whom the primary symptoms tend to be headaches, brain fog and difficulty learning. He's currently involved in a legal case in Massachusetts, where the parents of a 9-year-old child with EHS sued the school for refusing to provide him with a Wi-Fi-free space.

Health Effects of EMF Exposure

While many still doubt the reality of EHS, there's extensive — and growing — research showing EMFs are indeed harmful to human health. For example, research has shown EMFs:⁷

Create excess oxidative stress — EMFs activate voltage gated calcium channels located in the outer membrane of your cells.^{8,9,10,11,12} Once activated, the VGCCs open up, allowing an abnormal influx of calcium ions into the cell. The excess calcium triggers a chemical cascade that results in the creation of peroxynitrites, extremely potent oxidant stressors believed to be a root cause for many of today's chronic diseases.

Inside your body, peroxy nitrates modify tyrosine molecules in proteins to create a new substance, nitrotyrosine and nitration of structural protein.¹³ Changes from nitration are visible in human biopsy of atherosclerosis, myocardial ischemia, inflammatory bowel disease, amyotrophic lateral sclerosis and septic lung disease.¹⁴

Open the blood-brain barrier, allowing toxins to enter your brain.

Fragment DNA – Studies have shown EMFs cause DNA fragmentation. Significant oxidative stress from peroxy nitrates may also result in single-strand breaks of DNA.¹⁵

Damage mitochondria, and impair proton flow and ATP production – The enzyme ATP synthase – which passes currents of protons through a water channel, similar to current passing through a wire – generates energy in the form ATP from ADP, using this flow of protons. Magnetic fields can change the transparency of the water channel to protons, thereby reducing the current.

As a result, you get less ATP, which can have systemwide consequences, from promoting chronic disease and infertility to lowering intelligence.

Alter cellular function due to excessive charge – In a previous interview, Alasdair Philips, founder of Powerwatch,¹⁶ explained how EMF exposure alters cellular function by way of excessive charges. Essentially, the cell functions as a gel, held together by electric charge. When the charge becomes excessive due to a massive influx of electrons, the function of the cell is disrupted.

Raise the risk for abnormal cell growth and cancer, including leukemia and cancer of the brain, acoustic nerve, salivary gland, eyes, testes, thyroid and breast – As early as 2011, the evidence was strong enough for the International Agency for Research on Cancer, the cancer research arm of the World Health Organization, to declare cellphones a Group 2B "possible carcinogen."¹⁷

Since then, a number of studies have found support for EMF having carcinogenic potential, including two recent government-funded studies.^{18,19,20}

Has neurological effects – Studies dating back to the 1950s and '60s show the nervous system is the organ most sensitive to EMFs. Some of these studies show massive changes in the structure of neurons, including cell death and synaptic dysfunction. Consequences of chronic EMF exposure to the brain include anxiety, depression, autism and Alzheimer's disease, which Martin Pall, Ph.D., details in a 2016 paper.²¹

Contributes to reproductive problems in both sexes – For example, prenatal exposure to magnetic fields can nearly triple a pregnant woman's risk of miscarriage.²² Several other studies have come to similar conclusions.^{23,24,25,26,27} In men, studies show EMF radiation from cellphones and laptops reduces sperm motility and viability,^{28,29} and increases sperm DNA fragmentation.³⁰

Alters your microbiome – turning what might otherwise be beneficial microbes pathogenic. In the book "Cross Currents," Dr. Robert Becker states that when you expose a bacterial culture to abnormal electromagnetic fields, the bacteria believe they are being attacked by your immune system and start producing much more virulent mycotoxin as a protective mechanism.

This too can have far-ranging health effects, since we now know your microbiome plays an important role in health.

Human Life and EMFs

As explained by Blake Levitt in the film, author of "Electromagnetic Fields: A Consumer's Guide to the Issues and How to Protect Ourselves,"³¹ all life on planet Earth exists in harmony with the Earth's natural electromagnetic field.

"10 Hertz frequencies emanate from the core of the Earth [and] that's right where human conscious thought occurs," she explains. "What we've done with technology is introduce signaling characteristics that don't exist in nature; power densities that do not exist naturally on the surface of the Earth ... and

other forms of pulsations that do not exist in nature. There's no corollary in biology that understands ... how to adjust to this."

Levitt goes on to discuss how man-made EMFs disrupt all life; not just humans but animals, insects and plant life as well. It disrupts our natural circadian cycles, hormone levels and seasonal changes that occur in both humans and other species (such as the migratory activities of birds and butterflies).

She describes man-made EMFs as a "serious environmental toxin," due to its effects. "It's a form of energetic pollution, and people need to understand it as such."

Why Some People Develop Symptoms and Others Don't

However, it's important to remember that the primary hazard of EMFs, including cellphone radiation, is not cancer but, rather, systemic cellular and mitochondrial damage, which threatens health in general and can contribute to any number of health problems and chronic diseases.

Whether you feel it or not, damage is occurring. In one sense, people with EHS have an advantage, as the distinct discomfort makes them take proactive steps to avoid exposure, while everyone else remains oblivious.

In addition to taking proactive steps to reduce exposure (see guidance below), various forms of energy medicine,³² where you're strengthening your body's innate electrical system and meridian network, may also be a crucial EHS treatment component. By boosting your body's resilience against EMFs, many troublesome symptoms may be lessened or eliminated, making it easier to live a normal life.

Finding Refuge From EMFs

Today, this energetic pollution is so widespread, even many natural areas no longer offer the refuge from EMFs that EHS sufferers are in need of. Wood takes the film crew to her

recuperation spot deep in the wilderness where she goes whenever her symptoms become too much to bear. Here, all her symptoms vanish.

The Green Bank Observatory³³ in West Virginia is a national "radio quiet zone," meaning there's no cell service in the area. According to the observatory's business manager, Michael Holstine, many EHS sufferers have also found refuge here.

Howard is one of them. Every two weeks, her husband drives to visit her in Green Bank from their home in New York. By living in Green Bank, Howard no longer has to stay in a shielded room and is able to go places without having to worry about EMFs.

In this area, the background level of EMF is about 3.6 millivolts per meter (mVm). This is a very safe level as anything lower than 10 mVm is considered very safe. Most of my home has been remediated to this level, especially my bedroom. You can purchase an Acousticom 2³⁴ to measure the EMF level of your own home.

Suburban areas may have a background level of about 400 mVm, while hotspots can measure in the thousands. In Manhattan, the addition of thousands of wireless kiosks around the five boroughs have raised the background level to about 20,000 mVm, according to the film.

EHS Resources

Sweden has led the pack in acknowledging and addressing EHS, mainly due to the progress made by Elöverkänsligas Riksförbund³⁵ – The Swedish Association for the ElectroSensitive. The association produces and distributes educational literature that has helped raise awareness about the phenomenon around the world.

The EMF Experts website³⁶ lists EMF groups worldwide, to which you can turn with questions, concerns and support. EMFsafehome.com³⁷ also lists a number of publications where you can learn more about the dangers of EMFs.

Information, including a video lecture about EHS, can be found on EMFsafetynetwork.org.³⁸ Lastly, should you need help remediating your home, consider

hiring a trained building biologist. A listing can be found on the International Institute for Building-Biology & Ecology's website.³⁹

Remedial Strategies to Lower EMF Exposure

Several of the EMF sufferers in the film explain how they've remediated the EMFs in their homes, using a variety of means. Below are several suggestions that will help **reduce your EMF exposure**. You can also find guidance and solutions for mitigating electric and magnetic fields in this "Healthy Wiring Practices"⁴⁰ document.

Nighttime remediation

Flip off breakers (or a remote switch) at night to circuits in and around your bedroom to reduce 60 Hz AC electric fields. If you have metal-clad wiring and can keep your breakers on at night, use manual or remote plug-in switches at outlets to kill power to plastic lamp cords within 6-8 feet of the bed, or rewire lamps with MuCord from LessEMF.com.

Almost all dirty electricity in the bedroom will automatically be eliminated when you sleep if you flip off breakers to reduce 60 Hz AC electric fields, because dirty electricity rides on the voltage, which will be switched off.

If you have metal-clad wiring, voltage will stay on. In that case, use filters to remove voltage transients from your electricity and use meters to confirm that they are in a safe range. Keep filters more away from the bed, as they emit a localized magnetic field of about 2 to 3 feet.

Use a battery-powered alarm clock, ideally one without any light. I use a talking clock for the visually impaired.⁴¹

Consider moving your baby's bed into your room, or keep doors open between your bedrooms, instead of using a wireless baby monitor. Alternatively, use a hard-wired monitor.

If you must use Wi-Fi, shut it off when not in use, especially at night when you are sleeping.

For more extensive RF shielding, you can consider painting your bedroom walls and ceiling (and floor, if necessary) with special shielding paint, which will block RF from inside, as well as outside sources, such as cell towers, smart meters, radio/TV towers and neighbors' Wi-Fi routers and cordless telephones in an apartment or condo building.

Windows can be covered with metal window screen or transparent film. Line your curtains with RF-shielding fabric. For your bed, consider a shielding bed canopy.

Daytime strategies to reduce unnecessary EMF exposure

To reduce an important type of EMF exposure during the daytime, consider using Stetzer filters to decrease the level of dirty electricity or electromagnetic interference being generated. You can also take these with you to work or when you travel. This may be the single best strategy to reduce the damage from EMF exposure coming from voltage transients since it appears that most of them are generated by the frequencies that the filters remove.

Avoid daytime 60 Hz electric fields when using your computer by making sure it has a three-pronged, grounded plug rather than a two-pronged, ungrounded plug. Disconnect the two-pronged adapter on your Apple MacBook transformer and connect a grounded AC power cord.

If your PC laptop has a power cord with a two-pronged plug, connect a USB Ground Cord from LessEMF.com to a USB port on your computer and a properly grounded outlet. You can order shielded AC power cords for any PC computer tower or iMac from [Safe Living Technologies \(slt.co\)](http://Safe Living Technologies (slt.co)) or Electrahealth.com.

You can connect to the internet with iPhones and iPads while in airplane mode using a Lightning to Ethernet adapter and putting the device in airplane mode. You will need

a Cat-6 or 7 shielded, grounded Ethernet cable as well as an Ethernet grounding adapter kit from Electrahealth.com to avoid electric fields.

Metal lamps emit high electric fields because the metal, especially in floor lamps, amplifies electric fields. Reduce this by rewiring with shielded MuCord from LessEMF.com.

Keep unshielded power cords away from your legs and feet at your home (and office) computer to avoid electric fields while you work. Transformers plugged into surge protectors under your desk emit high magnetic fields. Move them more than 2 to 3 feet away from your feet.

Connect your desktop computer to the internet via a wired Ethernet connection. Then, just as importantly, be sure to put your desktop in airplane mode. Also avoid wireless keyboards, trackballs, mice, game systems, printers and portable house phones. Opt for the wired versions and disable Wi-Fi and Bluetooth whenever possible.

Ideally, work toward hardwiring your house so you can eliminate Wi-Fi altogether. Remember to always manually shut off Wi-Fi and Bluetooth on your router and computer when you do so. That does not happen automatically when you plug in an Ethernet cable.

It's important to realize that if you have a Wi-Fi router, you essentially have a cellphone tower inside your home. Even more importantly, remember that the device right in front of you that communicates with the router also sends out harmful RF signals, right into your body. Most people forget about this because radio signals are invisible. You cannot see or smell them like you can cigarette smoke, and they are silent.

Ideally, you'd eliminate your Wi-Fi and simply use a wired connection to get on the internet. If you absolutely must have a router, you can place it inside a shielded pouch or wire mesh box and then move it as far away from where you sit as possible. Never have the router in a bedroom or within 15 to 20 feet of one. You can find shielded pouches and mesh boxes online, or make your own using Swiss Shield fabric.

If you have a newer, thinner laptop without any Ethernet ports, various adapters will allow you to connect to the internet with a wired Ethernet connection from any Thunderbolt, USB or USB-C port. This is also true for the Lightning port on iPhones and iPads. Keep electric field EMFs low when you do this (see above).

When looking for a corded telephone for your landline or VoIP connection, be careful not to purchase a hybrid corded/cordless model. They have a corded handset but contain a wireless transmitter inside that is always on. Look for the designation "DECT 6.0" on the box and phone, as well as a cordless extension inside the box.

Even if you never use the extension, the base unit continues to silently transmit a radio frequency signal 24/7, especially when sitting on your bedside table, desk or kitchen counter. Switch to corded landline telephones and use them when at home. Call forward your cellphone to your landline number when home and put your cellphone in airplane mode.

Avoid carrying your cellphone on your body unless in airplane mode and never sleep with it in your bedroom unless it is in airplane mode. Even in airplane mode some cellphones can emit signals, which is why I put my phone in a Faraday bag.⁴²

When using your cellphone, use the speaker phone and hold the phone at least 3 feet away from you. Use an air tube earphone for privacy. Seek to radically decrease your time on the cellphone. I typically use my cellphone less than 30 minutes a month, and mostly when traveling. Instead, use VoIP software phones when traveling that you can use while connected to the internet via a wired connection or, better yet, use a landline telephone.

General household remediation

If you still use a microwave oven, consider replacing it with a steam convection oven, which will heat your food as quickly and far more safely. Measure magnetic fields near electronics and digital clocks at the front of stoves and dishwashers. Stand clear

of these (below 1 mG). Avoid induction cooktop units altogether, as they emit very high magnetic fields far into your kitchen.

Avoid using "smart" appliances and thermostats that depend on wireless signaling. This would include all new "smart" TVs. They are called smart because they emit a Wi-Fi signal, and unlike your computer, you cannot shut the Wi-Fi signal off on some models when you connect to a wired Ethernet cable (you can with Sony smart TVs).

Consider using a large computer monitor as your TV instead, as they don't emit Wi-Fi. Also, avoid "smart speakers," which continuously emit RF signals into the room.

Avoid electric beds and chairs. If you do use them, plug them into a power strip and flip that off when sleeping or sitting in them. Avoid high electric fields from ungrounded wires and metal frames. Also avoid magnetic fields from transformers that may be right under your body, and Wi-Fi in the foot of some beds. Switch these off in all cases when sleeping.

Replace CFL bulbs with incandescent bulbs, as CFLs produce dirty electricity. Ideally remove all fluorescent lights from your house. Not only do they emit unhealthy light but, more importantly, they will actually transfer current to your body just being close to the bulbs. Many LEDs are cleaner than CFLs, but incandescent bulbs are best, including new halogen incandescent bulbs.

Dimmer switches are another source of dirty electricity, so consider installing regular on/off switches rather than dimmer switches. Central lighting control systems (Crestron, Lutron) tend to have cleaner dimming modules. Request hardwired, not wireless, keypads when using central control systems, especially near beds.

Refuse smart meters as long as you can or, when you cannot opt out, add a shield to an existing smart meter, some of which have been shown to reduce radiation by 98 to 99%.⁴³

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