

## **An Introduction to Surviving Electrical Sensitivity**, by George Hughes

Electro-magnetic Hyper-sensitivity (ES) or (EHS) is a potentially disabling medical condition. People with EHS experience mild to life-threatening symptoms when exposed to electro-magnetic Fields (EMF), “dirty power”, and or high frequency radiation emitted by cell phone towers and other wireless technology. These frequencies are known to cause increased risk of cancer, learning and sleep disorders, etc, in the general population, but in electrically sensitive people they cause immediate or somewhat delayed reactions. Symptoms may develop gradually, or suddenly after a major exposure to EMF or high frequency radiation. EHS is often preceded by a chemical poisoning or Multiple Chemical Sensitivity (MCS).

**EHS symptoms vary**, but may include headaches, seizures, ear pain and ringing, tingling or hot sensations in skin and feet. These symptoms may also be caused by chemical or mold exposures, so test equipment and experimentation are needed to diagnose EHS. Which fields EHS people react to, and at what levels, varies from person to person.

The U. S. medical establishment ignores EHS, even though Sweden acknowledges it as a medical condition. Electricians, doctors, building biologists, and other “experts” are often clueless, so the EHS person must self-educate and learn to use basic test equipment and become their own doctor and detective.

**Reducing exposures** to EMF and high frequency pollution is the best treatment for EHS. People with mild EHS often recover to some extent by avoiding or limiting the use of cell phones, computers, TV’s, etc. Grounding one’s body by walking barefoot on the ground or touching a grounded wire may give temporary relief from symptoms. EMF decreases exponentially with distance, so maintaining as much distance as possible from electrical screens, wiring and appliances is key.

Avoid: Fluorescent light bulbs, battery chargers, digital displays, “wall warts”, dimmer switches, variable speed motors, and microwave ovens. These all introduce dirty power to the house wiring and contaminate the entire circuit they are on. Printers, computers and “wall warts” and battery chargers should be plugged into a power strip and the power strip should be unplugged when not in use.

High frequencies do not reduce as quickly with distance, so these sources should be avoided or hardwired, if possible: Wireless thermometers, thermostats, security systems, medical alert systems, baby monitors, smoke alarms, cordless and cell phones, WiFi and routers. Hardwire everything! Ultra-sound, brain scans, and other medical imaging may be harmful to EHS people and should be used sparingly.

Direct current (DC), solar panels, and battery powered lights are generally okay, but maintain distance from DC to AC inverters and controllers. Wrist watches pulse EMF every second. Landline phones use DC, but the magnet in the ear piece may cause symptoms, so EHS people often use speaker phones (the kind that are only powered by the DC phone line.)

**Test Equipment:** The Tri-Field Gauss Meter is used to measure EMF from wiring, appliances, cars, and with the external probe that makes it 10 times more sensitive, ground currents outdoors. The electrical field and microwave settings on this meter are not sensitive enough to be much use.

A cheap, battery powered AM radio is used to measure higher frequency fields, also called “dirty power.” Set the radio on the AM setting, tune it to the white noise between stations, and put it near a digital display. A growl/scream/chatter noise should

overwhelm the white noise. Use the radio this way to find dirty power on transmission lines, wiring and appliances. Move the tuning knob the full range to check for various frequencies. Putting the radio near metal objects, including wiring, may increase the static volume or allow a new station to be heard. This is normal and does not mean that metal objects are a problem.

Using the radio and the Gauss meter, you may find one or more circuits with abnormally high fields. This may be due to improper wiring, and Stetzer filters may make these problems worse. The average house reads between .1 and .2 milliGauss. This is as low as the TriField meter goes, and may be good enough for healthy people but not good enough for most EHS people, hence the need for the external probe. All electrical use creates EMF, which is measured in milliGauss. The higher the wattage and the longer the heating element, the higher the EMF. However, basic electrical use, such as light incandescent light bulbs and heating elements, should not produce “noise” on the AM radio.

**Stray currents** or dirty power can also travel on the neutral wire, which is like the sewer pipe of the power grid. Because of this, grounding wires for one’s body, plumbing pipes, water wells (this may not be code), or metal parts of the house should be grounded to a ground rod separate from the electrical grid. Neutral to ground wire shorts or having the neutral from one circuit tied to the neutral wire of another circuit (“tied neutrals”), in house wiring make neutral current problems worse. An OHM meter is used to test for tied neutrals or plumbing pipes being grounded to the power system ground. Testing for, and eliminating, neutral to ground shorts and tied neutrals is a basic step in reducing household EMF. If two metal objects are not shorted together, the reading should be millions of OHMs.

**A good, broad spectrum Radio Frequency (RF) meter would be nice.** The Cornet RF meter is a popular, medium price meter, but it has a gap at 800MHz, cell phone range. The best way to determine cell tower pollution is an Android phone with a signal finder ap or look on antenna search .com

**For new Homes.** Wiring should be twisted (2-3 twists per foot) or put in grounded metal conduit. BX or metal clad wiring may contain toxic machine oil and is not effectively grounded for longer circuits. The power meter and transformer should be as far from the house as possible, and circuit panel and major appliances as far from living and sleeping spaces as possible. The electrical grid should only be grounded in one place on the property, preferably at the power meter and transformer. Steel roofing and siding and aluminum vapor barrier shield out some high frequency fields.

**EMF in Cars.** Avoid steel belted tires. Dangle a grounding strap from the frame to the ground if static electricity is a problem. Sit as far from the alternator as possible. Mu metal is the best for shielding EMF from alternators, but the most effective place to put it may be around the driver’s footwell. As with all EMF exposure limiting the time and taking breaks is key. Diesel cars can be retrofitted to run on DC, without an alternator.

**Resources.** *Tracing EMF’s in Building Wiring* by Karl Riley

[www.eiwellspring.org](http://www.eiwellspring.org) Excellent EMF reduction articles, healthy construction details.

Retail: [www.lessemf.com](http://www.lessemf.com) 518-432-1550 TriField Gauss meter (other gadgets and grounding devices they sell may not be helpful and may contain toxins.)

Alpha labs 800-658-7030 for adding the external probe to the TriField Gauss meter.