

# **Improving Access to Public Spaces for People with Electrical Sensitivities**

**Andrew Eriksen**

People with electromagnetic hypersensitivity (EHS) are commonly excluded from public activities such as work, school, medical and dental care, shopping, recreation, worship, restaurants, and community events. Below is some background information, as well as a few simple methods that, at little or no cost, may make a public space more accessible to people with EHS.

It varies what is necessary to accommodate an individual, and also by the expected length of the visit. In some cases, all that may be needed is to turn off fluorescent lighting and place the person well away from computers and other electronics. It is essential to involve the EHS sufferer in reaching a solution.

## **Symptoms of EHS**

People living with EHS experience debilitating symptoms from exposures to electromagnetic fields (EMFs), such as those emitted by electrical wires and equipment. Symptoms vary but are likely to include flushing of exposed skin, tingling and burning sensations, joint pains and stiffness, head pain, a feeling of being “wired” and sometimes mental confusion, sleep problems, restlessness and irritability. A variety of other neurological symptoms are possible, including seizures.

People with EHS are commonly also chemically sensitive (MCS), that is, they are sickened by pesticide, fragrances, and other chemicals even at concentrations commonly considered safe. Some may also be sensitive to sunlight, mold, loud noise, or certain sounds - such as helicopters, jets, or even refrigerator motors.

The level of sensitivity varies with the person as it does with conventional allergies. Some individuals may have immediate symptoms upon exposure, while others’ reactions may not manifest for hours.

## **Sources of EMF**

Equipment radiating EMF can pose what is effectively a barrier to access for a person with EHS. Such equipment can include:

- Computers, TVs, video screens, radios
- Fluorescent lights and “low-energy” light bulbs (compact fluorescents and most LED lights)
- Cell phones and cordless phones
- Electric heaters and air conditioners
- Elevators and escalators
- Wireless devices such as microphones, headsets, and computer networks
- Transformers and power supplies, battery chargers, etc.
- Battery back-up systems for computers (UPSs)
- Surge suppressor power strips
- Amplifiers and speakers

- Dimmer switches
- Projectors
- Electric utility meters and distribution panels
- Inverters in solar-electric systems

## **Accommodating People With EHS**

Turn off any electrical device that is not essential, or better yet, unplug each device. Many are still partially “on” even when the power button is in the “off” position. A simple way to do this is to use a power strip (without built-in surge protection), and turn off the electricity at the power strip.

Permit an EHS individual to choose seating in as safe as possible a location. A distance of at least 20 feet from electrical equipment might be adequate for some visits of limited duration.

Typical walls and floors do not stop EMF, so check what equipment may be turned on in adjacent rooms. There is no place in any common building where the EMF level is really zero. The electrical system in the building will always radiate some EMF; that can constitute a barrier to the extremely EMF sensitive.

Provide an alternative waiting area, if needed. One suggestion is to let the person wait in the parking lot and send someone out to get them when ready.

Successful accommodations for individuals vary, depending on which frequencies are most problematic for that person.

Involve any affected person in reaching an accommodation that works best.

Initially such accommodations may seem complicated, but they may be no more so than fitting eyeglasses, or determining an optimum grade for a wheelchair ramp.

## **Computers and Other Electronics**

Computers, televisions, printers, fax machines, etc. are usually problematic. They radiate across a wide spectrum, most of which cannot be measured by low-cost instruments.

Using modern flat LCD-screens is better than the older style tube screens, but turning them off is always best. Make sure to completely remove the power by unplugging them.

## **Restrooms**

Electric hand dryers emit a strong field of radiation. Providing towels is a good compromise.

As almost all EHS-sufferers are also very sensitive to fragrances and cleaning agents, a restroom should be well ventilated and free of any fragranced products.

Exhaust fans should be possible to switch off, perhaps by using a timer that automatically turns back on

after 5 – 10 minutes. A better solution is to locate the fan away from the bathroom, perhaps on the roof of the building.

## **Lighting**

Fluorescent lights and low-energy lights emit high-frequency radiation from their ballasts. The flickering of these lights may be an additional problem. Most LED-lights have a high-frequency transformer inside. Regular incandescent light bulbs may be an improvement for some people. If fluorescents are essential, use the newer tubes with electronic ballasts. Daylight instead of electrical lights is a workable option for some people. It is best if there is a switch that can turn off the lights.

## **Cell Phones and Other Wireless**

Wireless devices are designed to radiate at great distances and are best avoided entirely or used very minimally, and never near an EHS sufferer.

Request that cell phones be shut off, not just silenced. Cordless phones and their base stations must be turned off, as they radiate constantly, even when not in use. Consider using corded phones.

Wireless networks, such as Wi-Fi, should be turned off. Consider installing a cable network instead, at least for some computers. At a minimum, relocate the wireless hub to a remote part of the building.

## **Systems for Presentations**

Amplification and sound systems contain powerful electromagnets and are best kept at a distance. The amplified sound itself may trigger symptoms for some with sensitivities.

Infrared remote control devices should not cause problems.

## **Heating and Cooling**

The cold drafts and the EMF from the electric motors in AC units are bothersome to many EHS sufferers.

Consider operating the HVAC (heating, ventilation, air conditioning) system hard prior to a meeting or workday, then turning them off.

Electric space heaters are usually problematic. There are lower-EMF models available, but they are best avoided entirely.

## **Measuring EMF's**

Relying solely on measuring instruments is not adequate, but they are still very much worth using, if only to determine rough baselines for the facility.

A gaussmeter is a good tool for troubleshooting. A good low-cost model is the TriField meter from Alpha Labs, available by mail order. However, a gaussmeter does not measure all types of

EMF radiation. Ultimately, the sensitive person is the only one who can determine whether a place is workable. Some highly sensitive people can react to levels very much lower than what the TriField meter can detect. The microwave and electric field settings on the TriField meter are simply not sensitive enough to be of any use.

The radiation levels are measured in milliGauss (microTesla in the Metric system). Both the intensity and the duration of the exposure are important. Many people with EHS can cope with certain exposures for an hour or two with readings up to one milliGauss (or 0.1 microTesla).

To locate the safest area of a public place, turn on all the lights and equipment to be used during the meeting or appointment and walk around with the gaussmeter. When focusing on a likely place to sit, check where different areas of the body will be, like the head, feet, etc.

As high-frequency EMF from electronics does not show up well on a gaussmeter, select a place to sit that is well away from any electronics, regardless of meter readings. To get a rough idea of the EMF radiation sources in a higher frequency band, use a cheap, hand-held AM radio. Cheap models are best for this purpose, as they pick up more static, which is what we are interested in here. Radios with digital controls are not suitable.

Set the dial between stations where the least sound and static are heard. Then place the radio near various electrical devices in the room. Try to put it up against an electrical outlet. Increased static indicates a source of EMF radiation. An AM radio is a crude tool and many people with EHS are more sensitive than the radio, and thus would need greater distance than what is enough to stop the static.

Neither the gaussmeter nor the AM radio is capable of picking up high frequency emissions from wireless devices, which also reach the farthest.

### **If Simple Measures Are Not Enough**

If these simple suggestions are not sufficient, turn off all the breakers for the pertinent part of the building where the meeting space is, including adjacent rooms as well as above and below. If this helps, turn the breakers back on one by one to determine which breakers cause the problems. It may be multiple circuits. The problem with a given circuit can be the wiring itself, as well as any equipment connected to that circuit.

If relying on a sensitive person to perform testing by their symptoms, remember that some symptoms first show up after a while and that the testing person will tire out quickly and not be able to tell accurately any longer.

If the location is still unsafe (inaccessible) with all the breakers off, the problem could be stray ground currents coming from other buildings or from the building's own utility feed. Or, it could be activities in nearby buildings or transmission towers. Check outside the building, at least thirty feet from any wall, to see if it is better there.

It can be frustrating detective work to solve complicated problems in order to accommodate an individual. It works like a person with five nails stuck in his foot who first feels better when all the nails have been removed.

If a space in a given facility can not be made accessible for a specific person, at least with achievable measures, then consider an outdoor venue in a setting chosen by the EMF sensitive individual.

### **Getting Assistance**

Experienced consultants for this sort of work are scarce. The electrical company may be unlikely to offer positive help, except with major wiring errors. Some buildings have poorly-designed and installed wiring, or very old wiring, which can cause electrical arcing and unbalanced circuits. Tracking these down may be beyond the expertise of many electricians. Ask around for one with prior experience.

An excellent book for electricians about correcting wiring problems is “Tracing EMF’s in Building Wiring and Grounding” by Karl Riley, available at 1-888-LESS-EMF / [www.lessemf.com](http://www.lessemf.com) or 1-800-497-9516 / [www.cutcat.com](http://www.cutcat.com) .

The author wishes to thank the many people who provided input for this article, including John Prisco and Susan Molloy.

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2008