Electromagnetic Hygiene in 12 easy Steps

How to create a cleaner electromagnetic environment

Electromagnetic Hygiene is a novel concept that refers to creating an electromagnetically "clean" environment –in other words–keeping the levels of electromagnetic fields as low as possible. Our environment is increasingly being bombarded by electromagnetic frequencies that include (1) radio frequency radiation, (2) poor power quality (also known as dirty electricity), and (3) low frequency electric and magnetic fields, and ground current. These different types of electromagnetic exposure constitute–electrosmog– a form of pollution. Some people become ill when exposed to this energy. For them, practicing good electromagnetic hygiene is necessary to initiate their recovery. For those who are not sensitive, reducing exposure to potentially harmful frequencies is a good preventative measure to maintain good health. This FACT sheet provides tips on how to create a cleaner electromagnetic environment in your workplace and at home.

Types & Sources of Electrosmog:

I. Radio Frequency (RF) and Microwave (MW) Radiation

Sources: Cell phone, cordless phone, smart meters, wireless baby monitors, wireless computer games, microwave oven, Wi-Fi router, some wireless keyboards and wireless mouse, wireless security systems, cell phone antennas, radar, TV and radio broadcast antennas.

II. Dirty Electricity (Intermediate Frequencies)

Sources: Computers, televisions, tube fluorescent lights, compact fluorescent light bulbs, dimmer switches, variable speed motors/tools, treadmills, vacuum cleaners, sewing machines, solar photovoltaic cells, wind turbines, smart meters and devices that require inverters. Dirty electricity flows along wires and can enter your home from neighbors through your electric panel.

III. Extremely Low Frequency (ELF) Electric and Magnetic Fields (EMFs)

Sources: Transmission lines, distribution lines (above and below ground), substations, transformers, electric breaker panel, faulty wiring, knob and tube wiring in older homes, power supply cables, electric appliances especially those that generate heat (i.e. electric stove, toaster, hair dryer), computers, and grounded metal pipes (in some areas).

IV. Ground Current (GC) also known as "stray voltage"

Sources: distribution and transmission lines (power lines), transformers, substations, faulty wiring problems, insufficient capacity of neutral to return unbalanced loads, equipment in the home or on farm. Note: this is often an issue for the electric utility to resolve.

Electromagnetic Hygiene in your Workplace (school environment)

1. *Electric Equipment:* Increase distance from electrical cords and electric equipment. Move the power bar at least 1 meter away from your feet. Use a wired extended keyboard to increase your distance from the computer screen. This will reduce the magnetic field.
2. *Lighting*: Try to work with the fluorescent tube lighting turned off. Remove CFL (compact fluorescent bulbs) from your work area. LED lights (ones that don't use transformers) are the lights of the future. In the meantime use incandescent light bulbs, as these do not generate poor power quality. NOTE: the original incandescent light bulbs are no longer available in Canada as the government has mandated that only energy efficient lights can be sold.
3. *Internet Access*: Use an Ethernet cable for Internet access (not Wi-Fi). If you need to use wireless, ensure the wireless router is as far as possible from your body and turn it off when not in use. Ensure that you turn off the Wi-Fi on your computer (tablet) and not just the router. Use a wired mouse and keyboard.
4. *Cordless Phone*: Replace your cordless telephones with a corded landline phone. The new digital cordless phones in North America (DECT phones) constantly emit microwave radiation, even when not in use. The older analog phones emit microwave radiation only when being used. The best option for reducing RF exposure is to use a wired phone.
5. *Cell Phone*: Text instead of talk, and use the "speaker phone" option when talking and don't hold the phone next to your head. Do not keep phone in a pocket, in your bra, or on a belt. When signal is weak and/or phone is searching for a carrier, it is transmitting at maximum power and should not be used at this time. When not using your cell phone, keep in airplane mode (with Wi-Fi turned off) so it does not radiate.
6. *Electrical Panel & Utility Room*: Ensure that workers (students) are at least 3 meters from an electric panel and are not adjacent to a utility room as these generate high magnetic fields.

   NOTE: Low frequency magnetic fields (those that we use for electricity) can penetrate walls, windows, doors, ceilings and floors. Consequently exposure in one room may be coming from an adjacent room. For this reason it is important to spend as little time as possible near such sources even if they are on the other side of the wall. Radio frequency radiation can also penetrate walls and is blocked or reflected by metal objects generating potential hotspots. If you are in a location where there is a radio frequency (RF) source and metal objects (filing cabinet, frig, stove, sink, etc.), your RF exposure may be higher or lower depending on the location of the source, the metal and your body.

   RECOMMENDATION: Have a qualified technician measure your workplace for electrosmog. In areas where people spend hours each day, levels should be less than the following values: 1 milliGauss for power frequency magnetic fields; 5 V/m for power frequency electric fields; 40 GS units for dirty electricity; 0.01 microW/cm2 for wireless radiation; 0.5 V for ground current at 60 Hz; and 10 mV for kHz ground current.

Electromagnetic Hygiene in your Bedroom

We spend a third of each day in our bedroom and for that reason, it is important that the bedroom be electromagnetically clean. Reduce electrosmog in your bedroom by following the steps for your office as well as the steps below:

1. *Baby Monitor:* Remove wireless baby monitors. Wireless baby monitors constantly transmit microwave radiation. Infants should not be exposed to this radiation. Sound activated baby monitors are not yet available in North America but are available in Europe.
2. *Clock Radio:* Move clock radio (and other electric equipment) so it is at least 1 meter from your bed (clock radios emit electromagnetic fields that may affect sleep). Keep bedroom as dark as possible as light also affects sleep.
3. *Computer, Cell Phone, Wi-Fi router, tablets:* Unplug computer at night if it is in your bedroom. Disconnect Wi-Fi router and turn your cell phone off or keep it in airplane mode with Wi-Fi turned off. This is especially important for children under the age of 18. Several national and international advisories are recommending that children under the age of 18 limit their cell phone use. Use ipods/ipads/smart tablets in airplane mode with Wi-Fi turned off and use a wired computer for Internet access.
4. *Smart Meters:* Ask your utility to have your wireless smart meter wired or use analog smart meters. If this is not possible, use GS filters[1] to reduce the levels of dirty electricity generated by smart meters and do not sleep in room adjacent to the smart meter. Shielding of the meter may be necessary if your smart meter emits radiation frequently (visit www.slf.co for meters and shielding material).
5. *Electric Blanket and Waterbed:* Avoid use of electric blankets and waterbeds. If you need to use an electric blanket, unplug it after it has warmed the bed. This eliminates the electric and magnetic fields generated by these blankets. If you turn the electric blanket off but leave it plugged in, it will generate an electric field. So to reduce exposure unplugging the blanket is essential.
6. *Turn Bedroom Power Off*: Consider turning off the power (at the electrical panel) to your bedroom (and adjacent rooms) while you sleep.

For more information visit:

www.c4st.org
www.safeschool.ca
www.getpurepower.ca
www.slt.co
www.magdahavas.com

[1] GS filters are tuned capacitors that reduce high frequencies voltages (transients) on electrical wires. They protect sensitive electronic equipment. Research shows they also reduce symptoms of electrohypersensitivity. These filters need to be installed with proper monitoring (microsurge meter) to ensure levels are sufficiently low for maximum benefit (visit www.getpurepower.ca for dirty electricity meters and GS filters).