Electromagnetism: 3% of the population hypersensitive, 50% sensitive

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Brad Blumbergs couldn't stand up. "I couldn't walk without a cane; my parents had to install railings along the corridors of our home because I kept losing my balance," says the 29 year-old Ontario native who was diagnosed with multiple sclerosis five years ago. Last year, to his great surprise, he put his cane away and even re-learned how to walk backwards and run a little. All of these changes can be attributed to a capacitor that filters the radio waves that infect domestic electrical wiring.

"I was sceptical," says the Whitby resident. "But three days after installing 16 Graham-Stetzer filters in as many electrical outlets, my shaking disappeared. I'm really, very happy because the effect wasn't just temporary. These filters are not effective for everyone, but I strongly advise people to try them."

Dr. Olle Johansson, from the department of neuroscience at the Karolinska Institute in Stockholm, explains that over the past fifteen years there has been a dramatic rise in the amount of people affected by electro-hypersensitivity (EHS). This has coincided with the mass production and distribution of electronic apparel, such as computers and cordless telephones, which use and generate radio waves.

A pioneer of computer and cellular technology, Sweden has recognised EHS as a physical handicap, and has entitled its' population of 9 million access to all available services that can enable hypersensitive individuals to live a normal life. According to polls, up to 290 000 Swedes, or more than 3% of the population,

have reported suffering symptoms of EHS when exposed to electromagnetic waves. Symptoms include: joint stiffness, chronic fatigue, headaches, tinnitus; respiratory, gastric, skin, sleep and memory problems and depressive tendencies. In Quebec, 3% amounts to 210 000 electro-hypersensitive people.

From Cancer to Hyperactivity

Ten different epidemiological studies published have shown that the risk of leukemia doubles when a child is overexposed to a magnetic field measuring at least 3 or 4 milligauss. Consequently, in 2001 the **International Research Agency on Cancer** (IRAC) classified 60-Hertz magnetic fields emitted by wires and electric devices as "possibly carcinogenic." Electromagnetic pollution is also tied to a wide range of other illnesses, brain cancer and Lou Gherig's disease among them, but proof is feeble and inconsistent from one study to the next. This is not owing to a lack of evidence but rather is due to a lack of research funding.

The deterioration of electrical quality causes several public health problems, according to the two electrical engineers that invented the famous Graham-Stetzer filters, David Stetzer from Wisconsin and Dr. Martin Graham, professor emeritus from Berkeley University in California. The number of children in the United States diagnosed with Attention Deficiency Hyperactivity Disorder (ADHD) rose from 950 000 in 1990 to 2.4 million in 1996. Mr. Stetzer is convinced that one of the contributing factors to the condition is the rise in pulsed (or transient) high frequency surges that infect domestic 60 hertz wiring. These brief over voltages are not only found in high voltage hydro lines, but in domestic wiring as well and are principally caused by the differing electric frequencies used by various electronic devices. The variable levels of electricity generate high frequencies and transients over the course of thousandths of seconds -- the effect of which is similar to repeatedly and quickly turning a water faucet on and off, causing a water hammer. The transient high frequencies are then fed directly

into appliances not plugged in to surge-suppressing power bars. The resulting "dirty electricity" contains transient high frequencies that are generally measured by thousands (kilohertz or KHz), that can spread from one building to another over a distance of several kilometres. At times, pervasive radio-waves (microwaves, measured in megahertz or MHz) are present. This pollution adds to the electrosmog emitted by radar, radio, television, cellular telephone and wireless Internet connection antennae. The waves of which can sometimes attain levels in the billions (gigahertz or GHz).

Existing residential currents are at 60 Hz, with about 60 cycles per second. In the case of the wireless Internet (WI-FI) connections that pervade our cities without any regard to public health, electrical field currents can change direction at a speed of approximately 2.45 billion cycles per second. Dr. Johansson underscores the fact that the human body, whose cells, nerves and organs function with electrical impulse, has a difficult time adapting itself to 60 Hertz frequencies, and has an even more difficult time with higher ones. Waves of 2.45 GHz, he explains, "have only been in existence for 10 – 15 years and are extremely elevated compared to the very weak earth and cosmic magnetic fields in which living cells have lived and developed for the past 3.8 billion years."

Engineer Martin Graham has invented a meter that plugs into electrical wall outlets and measures this electrical pollution coming from the 60-Hz carrier current. He recommends installing filters when the reading is more than 30 G-S (for Graham Stetzer) units. His filters, which cost $40 each, especially neutralise high frequencies between 4 and 100 kHz and associated electro-magnetic fields. Often, it is even possible to eliminate them at a minimal cost by correcting wiring errors, according to Andrew Michrowski from the **Planetary Association for Clean Energy** in Ottawa. Mr. Stetzer bluntly advises electrically hyper-sensitive people to do away with compact florescent lamps, computers, dimmer switches and other devices that affect the quality of electrical current.

Dr. Magda Havas, environmental science professor at Trent University in Peterborough, Ontario, teaches the country's only university-level course on electromagnetic pollution. According to Dr. Havas, Graham-Stetzer filters can help alleviate EHS symptoms and even relieve diabetics: "A polluted electrical environment increases blood sugar," she states in the March issue of Toronto magazine *Now*. "In an electrically clean environment, sugar levels drop within half an hour."

In 2003, Dr. Havas headed a six-week study in a Toronto area private school: Three weeks with filters plugged into the school's walls and three without. Teachers and students were unaware of both the EHS phenomenon and the objectives of the study. Nevertheless, 55 per cent of teachers reported feelings of greater satisfaction, less fatigue, less irritability and suffered fewer headaches and other types of pain while the filters were in place. 60 per cent reported improved student behaviour, particularly elementary students who were more concentrated and less disruptive. These findings prompt Dr. Havas to estimate that 50% of the population is more or less electrically hypersensitive, compared to other studies that indicate a few cases per million. She adds that in another school study in Wisconsin, the filters helped staff and the students alike to greatly reduce their consumption of asthma and allergy medication.

Last December, the World Health Organisation (WHO) published fact-sheet number 296 on EHS. It confirmed that EHS symptoms are real and even severe in 10% of those who claim to be afflicted: "EHS presents analogies with multiple chemical sensitivities (MCS), another disorder associated with low-level environmental exposure to chemical substances."

However, WHO refers to *reputed* sensitivity and affirms that, rather than an exposure to electric and magnetic fields in themselves, other factors could play a role in the onset of symptoms: flickering florescent lamps, reflection and other visual problems associated with viewing screens, poor ergonomic organisation at

computerised work stations, poor air quality, environmental work or domestic stress, fear of electric and magnetic fields or even psychological problems. "The majority of studies indicate that individuals suffering from EHS are incapable of detecting electric and magnetic field (EMF) exposure more precisely than ordinary individuals," WHO claims.

Response

For Magda Havas, "these studies haven't proven a thing. Different people are inconvenienced by different electromagnetic frequencies without necessarily being able to detect them. We can not see all ultraviolet rays but they can burn us. Not everyone who claims to be electronically hypersensitive actually is, but many people who know nothing of the syndrome can definitely be sensitive to this form of pollution. This is why it is necessary to determine the best manner in which to study it; a domain in which we certainly have a long way to go."

According to the New York publication, *Microwave News*, WHO has a conflict of interest in this area: Its activities are often partnered with cellular telephone manufacturers and electric utilities. Additionally, WHO's opinion conflicts with a high quality study conducted for the Dutch government in 2003, says Dr. Johansson (who was dismissed from the WHO EHS committee). Researchers from TNO Physics and Electronic Laboratory immunised their workspace from all exterior electromagnetic sources. The study concluded their original hypothesis: the absence of a causal link between exposure to radiofrequencies and cognitive parameters and well-being is erroneous. In this double-blind study (researchers and subjects didn't know who would be exposed nor when), people suffering from psychological and coronary problems were excluded and the statistically significant results were reviewed by two independent experts.

Thousands of scientific articles have already exposed the prevalence of cancer clusters arising in close proximity to cellular telephone antennae, emphasises Dr. Johansson. As early as the 1980's, this Swedish dermatologist established that

certain people develop dermatitis simply from using their computers. Recently, his team discovered that people who have been using cellular telephones for ten years or more increase their risk of developing benign tumours in their auditory nerves. Finally, these researchers discovered rates of lung cancer and malignant melanoma, the most fatal form of skin cancer, double with a population's exposure to FM radio frequencies.

In 1994, researchers at McGill University made the association between exposure to pulsed electromagnetic fields (PEMFs) and lung cancer in people who work in electricity. "The relationship between the dosage of PEMF and corporeal response was clear; this doesn't happen often in epidemiology," relates biologist Denis Gauvin from the **National Institute for Public Health in Quebec**. Unfortunately, this major discovery was never validated by other studies: Unhappy with the findings, Hydro-Quebec subsequently prohibited McGill researchers access to the study's exposure data that had been collected over a period of five years.

Denis Gauvin is preparing a policy proposal on "prudent avoidance" of electromagnetic fields to be presented to Health Minister Philippe Couillard this autumn. Unable to provide us any details in advance, the biologist however confirmed that with the proliferation of wireless appliances, "we will hear more and more about high frequencies." Certainly, many researchers suspect that the presence or absence of these microwaves could finally explain why the electromagnetic fields that pollute our homes are sometimes noxious, sometimes benign. You can count Brad Blumbergs among the convinced.

(Read in our autumn edition: Prudent Avoidance of Electromagnetic Fields.)

Resources:

Graham-Stetzer filters: 1 866 393-0506

www.getpurepower.ca/francais

WHO: www.who.int/peh-emf

McGill study: http://aje.oxfordjournals.org/cgi/content/abstract/140/9/805

Canadian information groups: http://members.aol.com/gotemf/

Andrew Michrowski: 1888 639-7730

www.pacenet.homestead.com

Publications by Dr. Magda Havas: www.stop-emf.ca

Reports made on cellular telephones and electro-hypersensitivity:

http://radio-canada.ca/actualite/v2/decouverts/niveau2_5587