

List of some of the problems reported

- Headaches
- Nausea
- Joint pain
- Heart pain
- Severe muscle pain
- Pins and needles in hands and feet
- Light headed
- Eye pain
- Can't think clearly
- Feel like air is heavy and thick
- Disrupted heart rhythm
- Fatigue
- Sleep issues
- Vertigo – dizziness
- Internal bleeding
- Reduction in melatonin
- DNA breaks
- Symptoms started with mobile phone, then progress to cause by any type of electrical device

### **Electrohypersensitivity: view from the Netherlands**

This website ([Stichting EHS](#)) is made by and for electro-hypersensitive persons, deals with the phenomenon of 'Electrical hypersensitivity'.

**A small percentage of extensive computer users develops a hypersensitivity towards electric and electromagnetic fields emitted by PC and TV screens and several other pieces of electric and electronic equipment in home and office. Symptoms vary and range from itching, dizziness and headache to skin rashes and intense fatigue. Work may become impossible altogether. Social isolation may follow.** Here, electrical devices threatening health are identified and their fields measured. Possible interference between fields and biological matter is discussed. Strategies to minimize such fields and the necessity to avoid exposure are put forward. We argue that for electro-hypersensitives life becomes bearable only if dramatic changes in their electric environment are made. Health officials should be aware of these phenomena.

**A working group of electro-hypersensitives was established in 2003.**

**The results of a questionnaire that was completed by 250 electrohypersensitive (EHS) persons in the Netherlands over a 3-year period, who contacted the EHS Foundation on their own initiative. Self-declared health problems were recorded along with the sources of electromagnetic fields (EMFs) – if known – that caused the health effects**

- [Electrohypersensitivity \(EHS\) in the Netherlands – A Questionnaire survey](#) (PDF, 20pp), Hugo Schooneveld and Juliette Kuiper, Dutch Electrohypersensitivity (EHS) Foundation

### **Electrohypersensitivity: the Canadian view**

#### **The Medical Perspective on Environmental Sensitivities**

Margaret E Sears (MEng, PhD)

## *Abstract*

Approximately 3 per cent of Canadians have been diagnosed with environmental sensitivities, and many more are somewhat sensitive to traces of chemicals and/or electromagnetic phenomena in the environment. People experience neurological and numerous other symptoms, and avoidance of triggers is an essential step to regaining health. The Canadian Human Rights Commission commissioned this report to summarize scientific information about environmental sensitivities. For those interested in the original scientific and technical literature, an annotated bibliography is available on request from [environmentalhealthmed@gmail.com](mailto:environmentalhealthmed@gmail.com) This report addresses issues such as the definition and prevalence of environmental sensitivities; recognition by medical authorities; education and training within the medical community; origins, triggers and symptoms of sensitivities; impact of environmental sensitivities in the workplace; government policies and standards for building codes, air quality and ventilation as they affect individuals with environmental sensitivities; and guidelines for accommodation within the workplace. For people with environmental sensitivities, their health and ability to work rests with the actions of others, including building managers, co-workers and clients. Accommodating people with environmental sensitivities presents an opportunity to improve workplace environmental quality and workers' performance, and may help prevent the onset of sensitivities in others.

- [Canadian Human Rights website](#)
- [Electrohypersensitivity: the Canadian view](#) (full PDF document)

### **Electrohypersensitivity: the Swiss view**

#### **Electrosmog in the Environment**

Electricity supply systems, electrical appliances and a wide range of transmitters for various wireless applications generate non-ionising radiation (commonly referred to as 'electrosmog') that can be harmful to our health, depending on its intensity. With its Ordinance relating to Protection from Non-Ionising Radiation, the Federal Council introduced a legal instrument to protect the population against the harmful effects of electrosmog.

This brochure (see link below) describes the main sources of electrosmog, assesses the associated risks, identifies existing gaps in research and suggests ways in which we can reduce our own level of exposure.

*Swiss Agency for the Environment, Forests and Landscape SAEFL, June 2005*

'The negative impacts of intensive non-ionising radiation on our health have been scientifically established and are undisputed, but with the exception of workplace accidents, people are never exposed to such high levels of radiation. However, biological effects also occur at levels well below internationally recommended hazard thresholds. Since scientists are unable to indicate how harmful these effects are, it is advisable to take certain precautions.'

- [Electrosmog in the Environment](#) (full PDF brochure)

### **Electrohypersensitivity: the Swedish view**

In Sweden, electrohypersensitivity (EHS) is an officially fully recognized functional impairment (ie, it is not regarded as a disease). Survey studies show that somewhere between 230,000 and 290,000 Swedish men and women report a variety of symptoms when being in contact with electromagnetic field (EMF)-sources. The electrohypersensitive persons have their own handicap organization, [The Swedish Association for the ElectroSensitive](#) (the website has an English version). This organization is included in the Swedish Disability Federation (Handikappförbundens SamarbetsOrgan; HSO). HSO is the combined voice of the Swedish

disability associations towards the government, the parliament and national authorities and is a cooperative body that today consists of 43 national disability organizations (where The Swedish Association for the ElectroSensitive is 1 of these 43 organizations) with altogether about 500,000 individual members. [[read more](#) (the site has an English short version)]

Swedish municipalities, of course, have to follow the UN 22 Standard Rules on the equalization of opportunities for persons with disabilities ('Standardregler för att tillförsäkra människor med funktionsnedsättning delaktighet och jämlikhet'; [[more about the UN 22 Standard Rules](#)]) All persons with disabilities shall, thus, be given the assistance and service they have the right to according to the Swedish Act concerning Support and Service for Persons with Certain Functional Impairments (LSS-lagen) and the Swedish Social Services Act (Socialtjänstlagen). Persons with disabilities, thus, have many different rights and can get different kinds of support. The purpose of those rights and the support is to give every person the chance to live like everyone else. Everyone who lives in the Swedish municipalities should be able to lead a normal life and the municipalities must have correct knowledge and be able to reach the persons who need support and service. Persons with disabilities shall be able to get extra support so that they can live, work, study, or do things they enjoy in their free time. The municipalities are responsible for making sure that everyone gets enough support. Everyone shall show respect and remember that such men and women may need different kinds of support.

In Sweden, impairments are viewed from the point of the environment. No human being is in itself impaired, there are instead shortcomings in the environment that cause the impairment (as the lack of ramps for the person in a wheelchair or rooms electro-sanitized for the person with electrohypersensitivity). This environment-related impairment view, furthermore, means that even though one does not have a scientifically-based complete explanation for the impairment electrohypersensitivity, and in contrast to disagreements in the scientific society, the person with electrohypersensitivity shall always be met in a respectful way and with all necessary support with the goal to eliminate the impairment. This implies that the person with electrohypersensitivity shall have the opportunity to live and work in an electro-sanitized environment.

This view can fully be motivated in relation to the present national and international handicap laws and regulations, including the UN 22 Standard Rules and the Swedish action plan for persons with impairments (prop. 1999/2000:79 'Den nationella handlingplanen för handikappolitiken - Från patient till medborgare'). Also the Human Rights Act in the EU fully applies.

A person is disabled when the environment contains some sort of impediments. It means that in that moment a man or woman in a wheelchair can not come onto the bus, a train, or into a restaurant, this person has a disability, he or she is disabled. When the bus, the train or the restaurant are adjusted for a wheelchair, the person do not suffer from his disability and are consequently not disabled. An electrohypersensitive person suffers when the environment is not properly adapted according to their personal needs. Strategies to enable a person with this disability to attend common rooms such as libraries, churches and so on, are for instance to switch off the high-frequency fluorescent lamps and instead use ordinary light bulbs. Another example is the possibility to switch off - the whole or parts of - the assistive listening systems (persons with electrohypersensitivity are often very sensitive to assistive listening systems).

In the Stockholm municipality – where I live and work as a scientist with the responsibility to investigate comprehensive issues for persons with electrohypersensitivity – such persons have the possibility to get their home sanitized for EMFs. It means for example that ordinary electricity cables are changed to special cables. Furthermore, the electric stove can be changed to a gas stove and walls, roof and floors can be covered with special wallpaper or paint with a special shelter to stop EMFs from the outside (from neighbours and mobile telephony base stations). Even the windows can be covered with a thin aluminum foil as an efficient measure to restrain EMFs to get into the room/home. If these alterations turn out not to be optimal they have the possibility to rent small cottages in the countryside that the Stockholm municipality owns. These areas have lower levels of irradiation than others. The Stockholm municipality also intend to build a village with houses that are specially designed for persons who are electrohypersensitive. This village will be located in a low-level irradiation area. [One of my graduate students, Eva-Rut Lindberg, has in her thesis project studied the ‘construction of buildings for persons with the impairment electrohypersensitivity’. The doctoral thesis will be presented during 2007.]

Persons with electrohypersensitivity also have a general (legal) right to be supported by their employer so that they can work despite of this impairment. For instance, they can get special equipment such as computers that are of low-emission type, that high-frequency fluorescent lamps are changed to ordinary light bulbs, no wireless DECT telephones in their rooms, and so on.

Some hospitals in Sweden (eg in Umeå, Skellefteå and Karlskoga) also have built special rooms with very low EMFs so that persons who are hypersensitive can get medical care. Another example is the possibility for persons who are electrohypersensitive to get a specially designed car so that the person can transport himself/herself between his/her home and their workplace.

Recently, some politicians in the Stockholm municipality even proposed to the politicians responsible for the subway in the Stockholm City that a part of every trainset should be free from mobile phones; that the commuters have to switch of the phones in these selected parts to enable persons with electrohypersensitivity to travel with the subway (compare this with persons who have an allergy for animal fur whereupon people consequently is prohibited to have animals, such as dogs or cats, in selected parts of the trainset).

In addition, when the impairment electrohypersensitivity is discussed it is also of paramount importance that more general knowledge is needed with the aim to better adapt the society to the specific needs of the persons with this impairment. The Swedish ‘Miljöbalk’ (the Environmental Code) contains an excellent prudence avoidance principle which, of course, most be brought into action also here, together with respect and willingness to listen to the persons with electrohypersensitivity.

Naturally, all initiatives for scientific studies of the impairment electrohypersensitivity must be characterized and marked by this respect and willingness to listen, and the investigations shall have the sole aim to help the persons with this particular impairment. Rule 13 in the UN 22 Standard Rules clearly says that scientific investigations of impairments shall, in an unbiased way – and without any prejudice – focus on cause, occurrence and nature and with the sole and explicit purpose to help and support the person with the impairment. Nothing else!

In addition, it must also be mentioned that quite recently, by the end of 2004, The Irish Doctors’ Environmental Association (IDEA) has announced that ‘they have identified a sub-group of the population who are particularly sensitive to exposure to different types of electromagnetic radiation. The safe levels currently

advised for exposure to this non-ionising radiation are based solely on its thermal effects. However, it is clear that this radiation also has non-thermal effects, which need to be taken into consideration when setting these safe levels. The electrosensitivity experienced by some people results in a variety of distressing symptoms which must also be taken into account when setting safe levels for exposure to non-ionising radiation and when planning the siting of masts and transmitters (IDEA, 2004)

Furthermore, the IDEA also points out the following:

1. An increasing number of people in Ireland are complaining of symptoms which, while they may vary in nature, intensity and duration, can be demonstrated to be clearly related to exposure to electro-magnetic radiation (EMR).
2. International studies on animals over the last 30 years have shown the potentially harmful effects of exposure to electro-magnetic radiation. In observational studies, animals have shown consistent distress when exposed to EMR. Experiments on tissue cultures and rats have shown an increase in malignancies when exposed to mobile telephone radiation.
3. Studies on mobile telephone users have shown significant levels of discomfort in certain individuals following extensive use or even, in some cases, following regular short-term use.
4. The current safe levels for exposure to microwave radiation were determined based solely on the thermal effects of this radiation. There is now a large body of evidence that clearly shows that this is not appropriate, as many of the effects of this type of radiation are not related to these thermal effects.

(IDEA, 2004)

Finally, The Irish Doctors' Environmental Association 'believes that the Irish Government should urgently review the information currently available internationally on the topic of the thermal and non-thermal effects of exposure to electro-magnetic radiation with a view to immediately initiating appropriate research into the adverse health effects of exposure to all forms of non-ionising radiation in this country, and into the forms of treatment available elsewhere. Before the results of this research are available, an epidemiological database should be initiated of individuals suffering from symptoms thought to be related to exposure to non-ionising radiation. Those claiming to be suffering from the effects of exposure to electro-magnetic radiation should have their claims investigated in a sensitive and thorough way, and appropriate treatment provided by the State. The strictest possible safety regulations should be established for the installation of masts and transmitters, and for the acceptable levels of potential exposure of individuals to electro-magnetic radiation, in line with the standards observed in New Zealand.' (IDEA, 2004). Of course, these very recent findings must also be taken into serious consideration for any research proposal.

It may also be noted that a unique conference recently was held in Stockholm in May, 2006. The theme for the conference was 'The right for persons with the impairment electrohypersensitivity to live in a fully accessible society'. The conference was organized by the Stockholm City municipality and the Stockholm County Council and dealt with the most recent measures to make Stockholm fully accessible for persons with the impairment electrohypersensitivity. Among such measures are to offer home equipment adjustments, ban mobile phones from certain underground cars as well as certain public bus seats, and through electrosanitized hospital wards. The conference was documented on film.

Olle Johansson

Assoc. Prof.

The Experimental Dermatology Unit  
Department of Neuroscience  
Karolinska Institute  
171 77 Stockholm  
Sweden