



Karolinska Institutet
Department of Neuroscience
Experimental Dermatology Unit

Stockholm, October 1, 2008

Mr Geoffrey Carr
Science Editor
The Economist
25 St James's Street
London SW1A 1HG
England

Dear Sir,

Re: MIND YOUR PHONE – ELECTROHYPERSENSITIVITY

I read your very interesting recent article in the print edition of the Economist dated 27th September 2008 and wish to make you aware of the situation in Sweden.

In Sweden, electrohypersensitivity (EHS) is an officially fully recognized functional impairment (i.e., it is not regarded as a disease). Survey studies show that somewhere between 230,000–290,000 Swedish men and women – out of a population of 9,000,000 – report a variety of symptoms when being in contact with electromagnetic field (EMF) sources.

The electrohypersensitive people have their own handicap organization, The Swedish Association for the Electrohypersensitive (<http://www.feb.se>; the website has an English version). This organization is included in the Swedish Disability Federation (Handikappförbundens SamarbetsOrgan; HSO). HSO is the unison 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 Electrohypersensitive is 1 of these 43 organizations) with all together about 500,000 individual members. You can read more on <http://www.hso.se> (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 people with disabilities” (“Standardregler för att tillförsäkra människor med funktionsnedsättning delaktighet och jämlikhet”; about the UN 22 Standard Rules, see website: <http://www.un.org>; since 2007 they have been upgraded into the UN “Convention on Human Rights for Persons with Functional Impairments”). All people 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”). People with disabilities, thus, have many different rights and can get different kinds of

Mailing address
Experimental Dermatology Unit
Department of Neuroscience
Karolinska Institutet
171 77 Stockholm
Sweden

Visiting address
Retziuslaboratoriet
Retzius väg 8
Solna

Telephone
Direct 468-52 48 70 58
Switchboard 468-52 48 64 00
Fax 468-30 39 04
Fax (KI) 468-31 11 01



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 shall be able to lead a normal life and the municipalities must have correct knowledge and be able to reach the people who need support and service. People 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 individual and 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/UN Convention 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 impediment. It means that in that moment a man or woman in a wheelchair cannot come onto the bus, a train, or into a restaurant, this person has a disability—he or she is disabled. When the bus, train, or restaurant are adjusted for a wheelchair, the person does not suffer from his disability and is 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 people with electrohypersensitivity—such persons have the possibility to get their home sanitized for EMFs. This 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, roofs and floors can be covered with special wallpaper or paint with a special shelter to stop EMFs from the outside (from neighbors and mobile

Mailing address
Experimental Dermatology Unit
Department of Neuroscience
Karolinska Institutet
171 77 Stockholm
Sweden

Visiting address
Retziuslaboratoriet
Retzius väg 8
Solna

Telephone
468-52 48 70 58
Switchboard 468-52 48 64 00
Fax 468-30 39 04
Fax (KI) 468-31 11 01



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 people 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 “building planning and construction of buildings for persons with the impairment electrohypersensitivity”.)

People 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, high-frequency fluorescent lamps can be changed to ordinary light bulbs, wireless DECT telephones removed from their rooms, and so on.

Some hospitals in Sweden (e.g., in Umeå, Skellefteå, and Karlskoga) also have built special rooms with very low EMFs so that people who are hypersensitive can get medical care. This is now also being planned for the new large Stockholm hospital which soon is going to be built. Another example is the possibility for people 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 people with electrohypersensitivity to travel with the subway (compare this with people who have an allergy for animal fur whereupon people consequently are 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, must be brought into action also here, together with respect and willingness to listen to the people 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!

Mailing address
Experimental Dermatology Unit
Department of Neuroscience
Karolinska Institutet
171 77 Stockholm
Sweden

Visiting address
Retziuslaboratoriet
Retzius väg 8
Solna

Telephone
468-52 48 70 58
Switchboard 468-52 48 64 00
Fax 468-30 39 04
Fax (KI) 468-31 11 01



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, "IDEA position on electro-magnetic radiation"; <http://www.ideaireland.org/emr.htm>).

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).

The former Swedish Prime Minister Göran Persson has declared that 2010 should be the final target year for the “National Disability Plan Policy” – “From patient to citizen” – adopted in 2000, according to which the whole of Sweden is to be completely adapted to those with disabilities. In addition, there is the EU “Human Rights Act” and the UN “Standard Rules on Equalization of Opportunities for People with Disabilities”, nowadays updated to the UN “Convention on the Human Rights of Persons with Disabilities”. One of the most important ideas in these documents is the “principle of accessibility” stating that people with disabilities are to have full access to public services. This is the basis for the fast introduction in Sweden and other countries of kneeling buses, wheelchair ramps, hearing loops, automatic door-openers, bevelled pavement edges, etc. However, where are the measures for the electrically hypersensitive? How are they to be able to be a normal part of the community with complete access to council offices, post offices, means of transport, cinemas, restaurants, hospital care and other facilities? Providing every electrically hypersensitive person with individually designed assistance, good care and stimulation to create participation in the community are very responsible tasks that require a high level of skill. Considerably greater demands must be made on training and work supervision than has



Karolinska Institutet
Department of Neuroscience
Experimental Dermatology Unit

been the case to date. Sharing experiences between different activities must take place much more smoothly and in a way that is completely free of prestige. The task of medical research must be to increase knowledge about different disabilities, as is in fact clearly defined in the Karolinska Institute's policy declaration, among other places. The over 200,000 people with the disability electrohypersensitivity in Sweden, as well as all the millions around the world, can only be provided with the right tools by our acquiring knowledge about their disability and immediately putting this knowledge to use to adapt accessibility. Examples of the organisations that have responded to this challenge are TCO Development (Swedish Confederation for Professional Employees), Sif (Swedish Union of Clerical and Technical Employees in Industry) and FEB. *But is everybody prepared to take on this work?*

I would be happy to answer any questions you may have. I very much look forward to read future articles emanating from your sharp pen and brain!

Yours sincerely

Olle Johansson, assoc. prof.

Mailing address
Experimental Dermatology Unit
Department of Neuroscience
Karolinska Institutet
171 77 Stockholm
Sweden

Visiting address
Retziuslaboratoriet
Retzius väg 8
Solna

Telephone
468-52 48 70 58
Switchboard 468-52 48 64 00
Fax 468-30 39 04
Fax (KI) 468-31 11 01