

BLACK ON WHITE

VOICES AND WITNESSES ABOUT ELECTRO-HYPERSENSITIVITY THE SWEDISH EXPERIENCE

**Compiled and commented by
Rigmor Granlund-Lind and John Lind**

This is the missing part of the official RALF Investigation.

This text was originally published in Sweden in 2002 under the title:

“Svart på vitt - Röster och vittnesmål om elöverkänslighet”. Its impact on public opinion has been considerable and is still growing. Now even politicians and mobile phone producers and operators are taking heed and try to find ways to stall further damage. We hope that this English PDF-edition will add fuel to the fire.

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Abstract

Black on White is a translation of a Swedish book, *Svart på vitt. Röster och vittnesmål om elöverkänslighet* by Rigmor Granlund-Lind and John Lind. It is available in English as a pdf-document, see below.

This book, published in 2002, is based on documents to the Council for Work Life Research (RALF in abbreviation) - statements at a public hearing 8 March 2000 and letters in connection with the hearing – from more than 400 electro-hypersensitive people or from people in close contact with them as relatives, doctors, EMF-reduction engineers, etc.

Here people explain what started their electro-hypersensitivity. Computers were perceived as the most usual triggering factor, followed by presence of amalgam/amalgam removing, fluorescent lights and low-energy lamps, cellular phones/base stations and ordinary telephones, chemicals and photocopiers.

They also mention the factors giving symptoms. In 2000, symptoms were primarily caused by computers but to a large extent also by all electrical installations, fluorescent lights and low-energy lamps, cellular phones and base stations, ordinary telephones, radio, TV, cars, trains, airplanes, copiers and dental work such as removal of amalgam.

What then are the symptoms? Skin problems top the list, followed by sensibility to light, eye problems, problems with the heart and the blood pressure, headaches, migraines, pain in joint and muscles, dizziness, concentration difficulties, nausea, memory disorders, endocrine reactions and many more. There are also parts of the book concentrating on the important role of chemicals, on the benefit of EMF-reduction, on the "electro-refugees" - that is those who cannot remain in their homes because of cellular base stations in their neighbourhood - on the social consequences for those afflicted and on the way the healthcare institutions and the political authorities deal with the problem.

An important chapter gives ideas to research, strongly criticizing provocation trials, explaining the reason why they are valueless. The percentage of letterwriters with higher education was large – some of them were postgraduates and many were engineers – and they all had the ambition to describe their handicap in as much detail as possible for the benefit of future research.

www.feb.se/feb/blackonwhite-complete-book.pdf

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The Government Commission

In 1997, the Council for Work Life Research (Rådet för arbetslivsforskning), RALF in abbreviated form, was commissioned by the government to present a survey and an evaluation of both Swedish and international research regarding electro-hypersensitivity and health risks related to electric and magnetic fields.

One step in this process was to provide those suffering from electro-hypersensitivity (EHS), their relatives, and persons who in other ways had come into close contact with the problem of EHS a forum where they could speak out. Consequently, advertisements were placed in the major daily newspapers announcing a hearing to be held in the auditorium of Norra Latin¹ on March 8, 2000 at which anyone who wished would be allowed to make a statement of no more than ten minutes, or to submit a written report no longer than two A4 pages to RALF. Those referring to newspaper articles or other materials were requested to enclose copies.

The auditorium was completely filled for the hearing. Present on the podium was RALF's General Director Gunnel Färm as well as the three individuals directing of the government commission, Ulf Bergqvist, Lena Hillert and Elisabeth Birke, not with the intent of making a contribution to the discussion, but merely to listen. Ulf Bergqvist did, however, explain the purpose of the hearing to the public, and we provide a quote from the written records, page 2:

“A few words about what will happen later on. With a stenographer's help, we will record everything that is said. In addition, we have received written statements – I believe that as of today the count stands at 300 contributions. All of this will be collected and will initially be part of the basic data for a meeting to be held on April 12, with experts who have previously been involved. The material will be organized according to chapter headings in some fashion in order to provide an easily discernible overview, but no other changes will be made; rather, that which is said or that which is submitted will be presented in unabridged form. We expect it to be completed in its entirety sometime around June 1, so that anyone who so wishes may order a copy.

There remains one very important step. People have come here to talk to us. It could be that there are those who wish to participate but not to have their statements published. For ethical reasons – and most likely, there are legal reasons as well – we will send a letter to all contributors in which we ask their permission to print their contribution as part of a report. Accordingly, we seek the active approval of all contributors. This means that those who do not respond to the letter will not risk seeing their words in print. The material will be available as working material, but that is all. I implore you: if you want to take part, answer the letter!

The report will also be included as a supplement to our final report. We will collect the information, which will then be disseminated further. That is in effect today's purpose.“

However, a report of that nature never materialized. The explanation provided was a shortage of money. There was, however, an exceedingly brief description of the 33 statements and 414 letters that took up slightly more than an A4-sized paper on page 108-9 in RALF's final report to the government, “Electro-hypersensitivity and the Health Risks from Electric and Magnetic Fields. A Survey and Evaluation of Research“. Instead of the promised printed report, the government received a cardboard box containing the original letters arranged in alphabetical order.

However, this material consisted of public documents. Since the general gist of the RALF report was that EHS in principal did not exist – something that made a major impact in the media - we became very curious about the contents of the letters. We had listened to the hearing and been impressed by the statements made, which we had considered to be exceedingly qualified, and felt that we had learned a lot. We went to the Ministry for Industry, Employment and Communications with the intention of at least spending a few days there reading as many of the letters as possible to form our own impression of them.

¹ Large school building in Stockholm.

We hadn't read many letters before we became convinced of the inherent value contained in the extensive documentation of the experiences of those suffering from electro-hypersensitivity. We asked to have the approx. 900 A4-pages copied so that we could read all of the letters in peace and quiet at home. Everything that had been said at the hearing was also provided in written form, both comments from the panel and from those who had made verbal statements. During the course of our reading, we did however discover that the supplementary material the letter writers had sent in was not included in the box of letters that RALF had delivered to the Ministry.

We then contacted the Swedish Council for Working Life and Social Research, FAS in abbreviated form, which, when RALF had been closed down, had taken charge of the material, and got access to the supplementary material. The information contained there proved to be very interesting; among other things, research reports regarding electro-hypersensitivity and the health risks involved with electric and magnetic fields. At FAS, the letters weren't kept in a separate box, but rather were arranged in binders, with the supplements following each individual letter, the exceptions being those that consisted of films about electro-hypersensitive persons, or of brochures, books or other bulky material. We also acquired copies of most of the supplementary material and familiarized ourselves with it.

When we had read everything, we decided to use the material as the basis for a book intended as an aid to politicians, the authorities, researchers, healthcare personnel and, last but not least, those suffering from electro-hypersensitivity themselves, so that they would be able to make use of the experience of others in order to improve their own lives.

Initially, one of us, Rigmor Granlund-Lind, who is a literary analyst, in collaboration with therapist Mia Lans and Professor Emeritus Jan Rennerfelt, conducted a systematic review of the material, which she used as the basis for an article published in *Läkartidningen*² no. 7/02. The diagrams in our book are based upon this systematic review.

DOCUMENTATION METHODS

Our documentation of this extensive material has been conducted in the following manner:

- We placed the emphasis of the different factors into different chapters: What triggered electro-hypersensitivity, what produces symptoms, what symptoms occur, the role of chemicals and so on. (Also, see the table of contents.)
- Naturally, we have not been able to make use of excerpts from all the letters, but have chosen what has been representative for the majority of letters. Citations from the statements and letters should therefore be seen as characteristic examples.
- We have limited our own text material as far as possible. Its only purpose is to clarify the patterns found in the various statements and letters.
- The names of all persons, places and companies have been deleted in order to assure anonymity. However, it is still possible for anyone who wishes to verify the objectivity of our analysis and compilation of the statements and letters, since every account and letter has been assigned a number determined by the order in which the material was found in the box from the Ministry for Industry, Employment and Communications and in the folders from FAS.
- We have not cited or referred to the material in the supplements, since the supplementary material was so extensive. It could serve as the basis for an additional book.
- Certain minor alterations were made in the presentation of the letters. A number of obvious and bothersome linguistic errors have been corrected and the names of persons, places and companies have been deleted, as stated above. At times, shorter sections of a letter were removed without indicting this. On occasion, the order of paragraphs was changed for purely didactic reasons, but such manipulations are very rare and in no way affect the content of the text.

² A major Swedish medical paper. The article PubMed ID is: 11887720

THE DATA

Just how representative those who participated in the hearing at Norra Latin on March 8, 2000 or those who wrote letters to RALF are of persons suffering from electro-hypersensitivity, is a question we asked ourselves after having read all the material. Those suffering from EHS, who are financially well off, have a strong psyche and have the support of those around them, seem best able to structure a tolerable life for themselves. They have had the strength and courage to inform RALF of their experiences. The ease with which most were able to express themselves was remarkable. The percentage of those with a higher education was considerable. Equally remarkable was the ambition to describe their handicap in as much detail as possible, for the benefit of the research group's final report. Some of the letter writers openly displayed their distrust over the fact that the Council for Work Life Research would be conducting an "objective inquiry", since those supervising the process were also members of Telia's Scientific Council and could therefore be suspected of looking after the interests of Telia³. Again, others instead expressed their satisfaction over the fact that RALF would partake of and help spread their experiences.

TERMINOLOGY

Many terms used in this area are uniquely Swedish. As far as possible, we have tried to find and use the corresponding English words, but sometimes that is very hard. Here is a list of some such words plus technical terms related to electric and magnetic fields and how they were translated in this report:

<u>Swedish term</u>	<u>English translation used</u>	<u>Abbreviation or shorter form</u>
- Amalgamsanering	Amalgam removal	-
- Elöverkänslighet	Electro-hypersensitivity ⁴	EHS (also ES)
- Elektromagnetiska	Electromagnetic	EM
- Elektromagnetiska fält	Electromagnetic fields	EMF
- Elsanering	Electromagnetic field reduction	EMF-reduction
- Elsaneringsföretag	EMF-reduction company/specialist	-
- Extremt lågfrekvent	Extremely low frequency	ELF
- Högfrekvent	High frequency	HF
- Lågstrålande	Low emission	
- Mikrovågor	Microwaves	MW
- Mobilmast	Cellular tower	

³ Telia is the largest mobile phone operator in Sweden.

⁴ Other common forms not used in this report are: Electromagnetic Hypersensitivity, Electrosensitivity (ES) and Electric (-al) Hypersensitivity.

What Triggered Electro-Hypersensitivity?

I worked as a computer technician, and I also used computers at home. Cell phone, cordless phone, waterbed with strong electric field, a clock radio near my head, solarium, stray fields throughout most of the apartment. It got to be too much. (Letter 401)

As indicated in diagram 1 on page 18, computers are the dominating triggering factor when it comes to electro-hypersensitivity. For some, the problems begin immediately after they start using a computer. A few letter-writers report that they could continue working with computers as long as the time they spent using them was relatively limited. Electro-hypersensitivity manifested itself when that exposure-time was significantly increased:

Let me begin by saying that I have worked as a doctor's secretary for about twenty years without a problem. After I began using a computer, I started having skin problems practically right away with redness, heat and the like. I, as well as the people around me, attributed it to the general excitement; it was all so new, exciting and a great deal of fun!

However, time went by and it didn't go away. Quite the opposite! It got to the point where I had to cover my face with my hand in order to remain in front of the computer. Sun factor, computer filters etc. were of little help. The period of time that I could stay at my station grew shorter, while the problem persisted for increasingly longer periods afterwards. The symptoms had increased and were now manifested in the form of pain in my cheeks, lips, mouth, upper body and shoulders. Also, a blue tinge began to be visible in my lower lip, chin and nose.

Finally, one day in the spring of 1997, I couldn't stand it any more. (Letter 127)

*

I am electro-hypersensitive; a medical condition that is real for me and for those in my surroundings 24-hours a day. I worked in an ordinary office, sitting in front of a computer monitor throughout the working day and I became sick. At first, I didn't connect the symptoms; a burning in my face, problems with concentration, headaches etc., but someone recommended that I contact a doctor as well as search for information over the Internet. I have now been on sick leave since the fall of 1998. (Letter 311)

*

My problems began in February 1992 with symptoms like a prickling, burning sensation in my face when working in front of a computer screen. My skin also acquired a red tinge and became irritated. My work environment was extremely electricity intensive, with a great deal of electricity and electronic equipment.

After a while, the problem increased, from at first only manifesting itself when close to a computer screen to also including exposure to fluorescent lights, TV's and other electric devices. (Letter 383)

*

Before, I was surrounded by all sorts of electrical equipment without even giving it a second thought, both at home and at work (computers, music-studio equipment, cellular phone, cordless telephone, microwave ovens, water-bed etc., etc.) My real health problem began when I installed a store computer system (which I was also involved in developing) for the convenience store that I ran at the time. (Letter 151)

*

I am 33 years old and became electro-hypersensitive when I was 27. At that time, I was studying to get my Masters in Engineering, Engineering Physics and Electrical Engineering. I had to quit my studies and am now on a disability pension. My symptoms began during a programming course. It started with a burning sensation and a facial rash with increased bodily activity when using a computer, and the rest of the time I was more tired than usual. What I believe triggered my problem was having some amalgam dental fillings removed (I had never reacted to computers before). I had a severe reaction after every dentist's appointment and can see a clear connection with regard to the time element. (Letter 130)

*

At first, I didn't believe that it could happen to me; I just continued on as before, despite the fact that one of my colleagues also got sick, though not as severely as I. "It won't happen to me." But I was soon to become aware that such was the case. My condition worsened steadily when working with a computer, although not so much on the outside as inside my head. I began getting terrible headaches, I couldn't think or concentrate properly, so I tried to avoid computers.

Since I worked as an instructor within the electricity and telecom industry, it wasn't easy to completely avoid electricity, and I grew worse day by day. I did have, however, a workroom that was OK, and I fled to it as often as I could get away from my students. The final straw came one day when I was to instruct a number of students in CAD diagramming. Since I was uncertain as to whether I would be able to complete the course, my colleague promised to take over if necessary. The last thing that I clearly remember was that I was standing between a couple of computers and pointing in a book to explain something. Then I felt as though my brain stopped working. I didn't say anything, couldn't think, don't know exactly what I did, but I was finally able to get out of there and make my way to my office.

I then sat there quite a long time to recover, first apathetically, then with tears of disappointment and anger running down my face. To my despair, the next day I became aware that I couldn't even stand a fluorescent lamp in a room without any other form of electricity. I was in a state of total despair. (Letter 54)

*

Today, I am 22 and became sick in April of 1999. I trained as a film editor for five months, sitting daily in front of three large monitors in a small room with poor ventilation. I sat there far too many hours (approximately 14-15) every day. I was/am young and ambitious and enjoyed film editing, in addition, I was completely naive, because if I had been aware of the dangers I would never have agreed to expose myself to such a degree.

In any case, I became ill quickly and my condition was quite serious. There was a tingly, burning sensation in my skin and I lost all feeling on the left side of my face. It felt as if I had a battery in my mouth and everything was swimming before my eyes. (Letter 162)

*

I am a nurse anesthetist by profession and in September 1993, I began working with a computer expert to design a booking program for an operation ward. Worked three days a week with this, Tuesday-Thursday. Worked with two computers simultaneously, of the model where the computer is situated on the table under the monitor.

Had only worked a few weeks when the problems began, with eye irritation and headaches. Then came one symptom after the other in rapid succession, such as a throbbing in my teeth in both the upper and lower jaws, mild dizziness, mild nausea, ice-cold feet, sleep disorders, sweating and shivering during the night and extreme tiredness. The headaches were terrible on Fridays, after three working days, but decreased during the weekends and had nearly vanished on Tuesday, when I began working again. During weekends, I had to lie down in the middle of the day. Was extremely tired.

There was a ten-day break from working with the computers between Christmas and New Year, and during those days, one symptom after the other disappeared. Since I have a sister who is electro-hypersensitive, I now understood what it was all about. Realized that I had to stop working with computers. It was with deep regret that I asked not to work with computers, because the work was perfectly suited to me. The headaches, dizziness, nausea, sweating, shivers and the cold feet had disappeared during the ten-day break, but it took three weeks before the sleep disorder disappeared and an additional couple of weeks before my teeth felt normal again. (Letter 19)

*

In September 1998, my employer reorganized the place I was working at; the change involved an increase in the amount of time I spent working with a computer, from approx. 2 hrs./day to 7-8 hrs./day, and that I would be sharing a room with someone who also worked with computers all day. I tried to talk to my superior about this, but the only change my superior suggested was to replace the fluorescent lamp, which was never turned on.

In October 1998, I was no longer able to work and went on sick leave. I was on sick leave until September 1999, when I went back to school (upper secondary school competency). My employer paid for the replacement of fluorescent lamps in my classroom, from regular fluorescent lamps to special fluorescent lamps with a so-called HF⁵ system; they aren't good but are better than the old ones, which I absolutely wouldn't have been able to stand. So far, I'm still at school, even if there are some problems. I sit far away from the lamps, which are not usually turned on during the days. (Letter 329)

*

I work as an engineer with the maintenance, management and a certain amount of development of computer systems and communications equipment. A job with a great deal of variation, which I am very satisfied with. A few months before the trouble started I had begun a major programming assignment, which meant that I spent much more time than normal working on my PC. The assignment was stimulating and there was no time pressure. During the beginning of 1995, I had acquired a GSM telephone, which I used relatively moderately.

My period as someone suffering from electro-hypersensitivity began in the late autumn of 1995. I had suffered from a headache for several weeks, after which I was bedridden with influenza-like symptoms. When I got back on my feet again after several days, I sat down to watch some TV. After a few seconds, there was a strange feeling in my head, one that felt like an irritation at the same time as it felt somewhat "warm". The experience was almost traumatic and I had trouble accepting it. (Letter 152)

Electro-hypersensitivity is often triggered when a person who previously worked with computers without problem gets new computer equipment (also see the chapter on chemicals, page 40):

After more than 20-years of computer usage, I suddenly started feeling a burning in my face and the rest of my skin in connection with switching over to a new computer at work (no question of sunburn). It took about two months to realize that it was caused by the computer monitor. After six months I bought a portable computer with a TFT monitor and DC feeding, did not use fluorescent lamps and so on. This helped reduce the skin problems etc., however, my skin was sensitive to strong sunlight all summer. Later, in September 1999, when I worked in a room with a lot of fluorescent lamps, variable speed motors, computers etc. for two-three weeks, my body developed something that can be classified as general electricity and light hyper-sensitivity, after which life has become a living hell. (Letter 45)

*

In March 1996, we switched computers at work. It was as if they had placed a gigantic monster in front of me. I felt the emissions with my hands. I asked my colleagues whether they felt something too, but they didn't feel anything. I stuck it out for a few weeks, but then my body couldn't take any more. I was on total sick leave for seven months. It was only then that I realized where all my problems and pain had come from during the year, even though I really didn't know anything about electro-hypersensitivity. (Letter 391)

*

I have worked as a section assistant for many years. The problem came in 1993 when we installed new computer equipment at work. A laser printer and a computer were placed in the same room my colleague and I worked in. There was also a photocopier and a fax machine.

We became ill at the same time, manifested by a prickly sensation in the face and on the arms. I believe it was the laser printer. They say it should be placed in a separate room when it's new, but we didn't know that then, nor that there shouldn't be too many electric machines in the area where one works.

⁵ HF means High Frequency.

A process of EMF-reduction was initiated; the computer, printer and photocopier were moved to a different room. We felt better, but not completely healthy. (Letter 181)

*

I am over 50-years old and a high school teacher with training in mathematics, physics, chemistry, computer sciences and business economics. Active in orienteering and a sports leader for 30-years. Five Vasalopp⁶ starts. After more than ten years of working as a computer instructor, I came down with electro-hypersensitivity in 1993. This occurred when I was working in a poorly ventilated computer room with twenty new computers. I managed to complete the instruction for the remainder of the term and afterwards taught mathematics and chemistry.

Up until the spring of 1998, I was able to work fulltime by avoiding computers and TV's, but the problems began progressively to increase. In May of 1998, I had severe headaches and a number of instances of cardiac palpitations (up to ten minutes in length). During the summer break, I saw no alternative other than to begin the process of amalgam removal. Just after the first two appointments, separated by a one-week interval, the problems increased dramatically. For example, I couldn't talk on an ordinary telephone more than a few minutes without severe difficulties. At the same time, had a strong reaction to printer's ink from daily newspapers.

Continued removing the amalgam with a different dentist who had protective equipment. One filling was removed every sixth week, and this time it worked better. (Letter 15)

*

[It] Began in connection with a change over to new computers in 1996, the old photocopier that always caused problems was replaced by a new one, which also had to be repaired time and again, and smelled strongly after each repair occasion. A new fax machine and a new server that served the whole company arrived. The server was active all day long and should have been located in a metal cabinet. Instead, it wound up on the desk in my office, with a fluorescent lamp hanging right above. The photocopier was located 20 cm. behind my back. My problems arose in this office. A printer was also set on the desk as well as a regular electric typewriter, which we needed so that we could type out certain documents. (Letter 51)

*

I was afflicted along with my seven colleagues when our large-sized company bought new computer equipment in 1989. Within two weeks, we all had eye injuries or skin problems, or both. One hundred percent of those who received new equipment were affected, and no one believed that it was psychological. Eight old-school secretaries don't fall apart at the same time!

That's why contact was quickly established with protective health authorities, and Chalmers University was brought in. We discovered that the machines we received in 1989 belonged to the worst category. Quite simply, we were subjected to a construction flaw: magnetic coils were situated at the front. There are often explanations as to why things happen. (Statement 13)

The large electromagnetic exposure that may be present at computer courses has been the starting point of electro-hypersensitivity for many of the letter writers:

I have been electro-hypersensitive for six-seven years. The following are a few of my experiences.

My electro-hypersensitivity began when I was on a computer course. I got very sick after only one day. My head hurt in a new sort of way. My short-term memory deteriorated, my lips felt numb, I was very sensitive to light. After that, I reacted to computers, fluorescent lamps, low-energy lamps, talking on the telephone for any length of time.

My first reactions to electricity came eight-nine years ago when I worked as an illustration editor and often spent time at a layout table with a strong magnetic field. But I didn't understand that at the time. (Letter 17)

*

⁶ "Vasaloppet" is the largest cross-country ski contest in the world

I became hypersensitive to computer screens in October 1995, during a three-day intensive course in a new computer program for a very diverse group. We complained about sunlight from the windows and flickering screens. There were an unusual number of fluorescent lamps on the ceiling. The screens were placed on high tables, with no possibility of adjusting them to suit individual needs. In addition, you had to constantly keep switching your focal point between the screen, keyboard and the board, where the teacher wrote things down and taught.

By the first evening, I felt a strong, strange and unfamiliar tiredness that never went away. After the course, I experienced strong sensitivity to light and was forced to wear sunglasses. In addition, there was a feeling of dryness in my eyes and mouth. I developed swelling in my eyelids and in my face, a prickly feeling in my body, and I had an irritating feeling of movement and reaction in the back of my head. There was also pain in my eyes, dizziness and cardiac palpitations. (Statement 29)

*

I am a 39-year old woman who has suffered from electro-hypersensitivity since March 1996. The triggering factor was a computer course offered by the employment agency that I participated in fulltime for eight weeks.

Another woman and I had a burning sensation in our faces and chests. A spreading pain and cramp sensation in muscles and joints, especially in the arms, developed. Then my entire body began to react to the premises, as if something was vibrating in the air. I withdrew from the course after three weeks.

The circumstances were as follows: 16 course members; computers placed tightly together so that each individual was doused from their own screen emissions, side emissions from their neighbors and back emissions from the person in front. The computers were turned on from 7.30 a.m. - 3.30 p.m. without pause; poor ventilation; the electric mains supply under these premises.

Since then, I react to electric equipment such as the stove, vacuum cleaner, iron, TV, computer, CD player, listening loops, fluorescent lamps, low-energy bulbs, newer cars, the X2000⁷ train etc. My symptoms are mainly a burning and prickly sensation in the skin, pain in muscles and joints, pain in my jaw, memory disorders, dizziness. (The woman mentioned above is also electro-hypersensitive today.) (Letter 369)

The total electromagnetic exposure also seems to be the most common cause of electro-hypersensitivity. Many people describe the work environment that made them sick. A few selections:

In the autumn of 1986, the problems with my joints began and an unusual sensation of tiredness became more and more accentuated. At that time, I underwent a root filling and got a porcelain crown with dental gold underneath. I had a large number of amalgam fillings from before.

In December 1987, I moved to my current home in an ecological community. An energy-saving lifestyle with heat exchangers, direct-action electric radiators, electric water heater, earth toilet with electric-powered fan and one wall adjoining the building's main power supply. My movements began to feel heavier and slower. There was often a metallic taste in my mouth.

In May 1988, my work responsibilities and work environment changed. I was given the responsibility of dealing with interlibrary loan applications in an open-plan office with fluorescent lamps in the ceiling, with large tangles of cable by my desk, computers with printers, photocopiers and fax machines. I began to feel evermore sluggish and slower in action and thought. Pain in my left eye, neck, back and joints, tired eyes and constant influenza-like symptoms. (Letter 98)

*

After working manually in the X-ray reception desk from 1967, my workplace became computerized in 1990 and equipped with electrical apparatus in a much different way than before. In February 1991, I began to feel prickling, itching, burning sensations and numbness in my fingers, hands and underarms. There was also a redness to my skin and my fingers became swollen. After another few months of working with a monitor, I began to be bothered by dizziness and headaches, and then also developed eczema on my underarms and a rash on my face. (Letter 48)

⁷ A modern Swedish express train.

*

I have not been able to work since February 1997 due to electro-hypersensitivity, and at present I receive a disability pension. I was a secretary during the last ten years that I worked and sat in front of a monitor and a PC daily. In addition, I had printers and fluorescent lamp fixtures around me. I also made a great deal of use of photocopying equipment. During the last two years, I also had a house with direct electricity, which was located near a power station. In my spare time, I made frequent use of cordless telephones and cellular phones. (Letter 30)

*

My problems began in 1991. At that time, I had been working at a department store for 20-years. Started off as a cashier, but during the last seven years worked with cash accounting. My office was over the battery of cash registers, with all the fluorescent lamps and wiring. The room was full of electric equipment, two banknote counters, two calculators, telephone, computer and printer. The air was also of very poor quality up there. There was no fresh air intake, and as you know there is a great deal of dust in money. There were five computers operating all day in one of the closest rooms. In the other room was a huge apparatus (storage battery cell) that was constantly being charged in case something were to happen with the cash registers.

When my problems began, with a prickling around my mouth and heat pains in my face, I didn't understand what it was. (Letter 227)

*

I am a 43-year old woman who has been suffering from severe electro-hypersensitivity since 1995. At that time, I moved into an apartment where various symptoms emerged almost immediately. It began with a strong sense of physical uneasiness and a feeling that something wasn't as it should be. In addition, I suffered from severe sleep disorders, influenza-like symptoms, headaches, severe tiredness, weakness, dizziness, sensitivity to light, pain in my joints, shortness of breath, and I got electric shocks from objects, such as cars and telephones. During a one-month period, I had a number of high fevers. It felt as though I were dying.

By coincidence, I discovered that the power mains for two apartment buildings were located in the basement under my bedroom. I moved my bed to the living room, which helped reduce the symptoms.

An electric company measured the EM field, which proved to be quite high. (Letter 411)

*

My reactions to electric and magnetic fields began during the beginning of the 1980's. Received employment with the Energy Administration, where there was a relay interlocking plant, centralized tele-control, incoming power lines, double rows of fluorescent lamps in every room. (Letter 226)

*

Worked in a room for two persons with only ceiling, floor and table lighting – no windows, no air. A great number of electrical machines, large photocopying apparatus one meter from my workstation. The room was two times three meters.

We were situated directly under the power mains for the entire shopping mall! It wasn't only I who reacted to the electricity. Work colleagues couldn't sleep, itching on legs and arms, taste of amalgam. (Letter 350)

*

My work environment was overloaded with electrical gadgets of different kinds: Computers, monitors, printers, electric typewriters, telephone, photocopiers and fluorescent lamps in clipboards, table lamp and ceiling lamp. Cables from all the machines at the work desk were mounted along the table's metal frame, which increased the effect.

There was also a bordering worktable with a double computer setup and other electric equipment, as well as a lot of fluorescent lamps mounted in the floor underneath, a short distance from the soles of our feet.

All bordering rooms were strongly electrically contaminated environments.

When measured, the magnetic fields from the computers clearly showed higher readings than the highest recommended level⁸. Another example of the same kind measured extremely high values of both electrical alternating fields and magnetic fields. The workplace was filled with computers of the same brand. The amount of time working with computers was often 6-8 hours per day.

When my problems began, I discovered that four other persons at the company already had the same type of electricity-related problems. Approximately two years later, the main safety representative reported that the company now had at least 20 persons with electricity-related problems. That was in January 1990. (Letter 251)

*

After a move, I wound up in a room for two persons (although the area was as large/small as my previous room). In this room, two long rows of fluorescent lamps were turned on (I myself had never turned on fluorescent lamps before because I found the light unpleasant) as well as three new computers, two printers, two telephones, a mass of cables in a pile under the desk and a photocopier outside of the door. Besides computers, telephones etc. and even a fax machine were located on the other side of the wall where I sat. In addition, the police department's switchboard was located just opposite.

After about an hour on the first day in that room, I felt that something was making me feel very ill. Unfortunately, I suspected what it could be, but wanted to give it a chance. It was a Friday (which I will never forget) and I thought I might be coming down with the flu. During the weekend I was fine again. On Monday morning I began to feel the symptoms directly, and after a half hour I was very ill. (Letter 278)

It is not only electromagnetic influences but chemical influences as well (see the chapter Chemicals, page 40) that are brought up as factors that triggered electro-hypersensitivity. Here is only one example:

During 1986-87, new ventilation was installed, a new PVC floor was laid, the office unit was painted and new wallpaper hung. At the end of December 1997, new fluorescent lamps were installed, suspended lowly over the customer service counter where I sat. In the beginning of 1988, I started to have the first skin and mucous membrane symptoms, which became progressively more severe. In December 1989, I received a computer, which I worked with throughout the day. On February 13, 1990, I was placed on sick leave because I wasn't able to work any longer.

The dermatologist had given me strong cortisone ointments, but that didn't help. During the month of April 1990, I was examined by a skin clinic. No demonstrable allergies, but a professional dermatologist diagnosed my symptoms as sick house syndrome and electro-hypersensitivity. It turned out later that I was hypersensitive to chemicals as well. (Letter 256)

At times, so many potentially harmful factors can appear simultaneously so that large numbers of employees become ill:

During a short period of time (approximately one year) at my place of work, 30 or so engineers, most of them men, developed electro-hypersensitivity during the period prior to and around 1990. Nine of eleven engineers in my own unit were afflicted.

We had introduced new monitors and computers, and everyone happily worked many hours a day with the system that, from a technical point of view, was excellent. At the same time, antennas for mobile telephony had been mounted on the roof of our place of work. The level where I sat was approximately 0.5-1V/m at 900 MHz.

⁸ Above the MPR-I recommendations at that time.

What had triggered the symptoms? Why had so many become ill during such a short period? One possible explanation is the combination of new monitors with their fields, microwaves from the antennas on the roof outside the window (which can open the blood – brain barrier) and chemicals in the office environment, such as brominated flame-retardants⁹ from those monitors. (I remember that both the monitors and the computers had a strong odor.) Another contributing factor could be the simultaneous exposition to the magnetic fields from the fluorescent lamps in the floor under the one we occupied. This is because the field strength from them was almost eight times greater than the fields from the monitors (650 nT respectively 85 nT). (Letter 337)

In some, though relatively few cases at the time of the RALF letter-collection, it appears that the microwaves from mobile phones or cellular base stations may have triggered electro-hypersensitivity. (Compare the chapter: What Causes Symptoms? page 19, in which the symptoms of many already electro-hypersensitive were increased by the microwaves from mobile telephony. Also see the chapter: Electro- Refugees, page 71.) Here are a few examples:

One and a-half years ago, i.e. the fall of 1998, I developed electro-hypersensitivity and sensitivity to cell phones and transmitters. If I am in the vicinity of someone talking on a cell phone, I come down with influenza-like symptoms, with pain throughout my body, a feeling of fever without actually having a fever, headaches and a sore throat. These symptoms disappear after one or two days, but can remain longer if the exposition to the mobile radiation had been extensive.

When I ride the bus or the subway during rush hour, there are often so many people talking on phones at the same time that it is impossible to maintain an adequate distance from them. Even transmitters around the city are a problem. Some bus stops are located so close to transmitters that I can't wait there, but instead have to walk several bus stops away to find one I can wait at. If I am in a building located opposite a transmitter, the same symptoms arise.

Since I have never had any previous problems whatsoever with electrical apparatus, I have tried to find out if anything in my surroundings has changed. I discovered that cellular telephone transmitters were erected in October 1997 in the TV mast situated a few hundred meters from my apartment. As early as the summer of 1998, I began to feel a bit tired and became progressively more tired until the autumn, but never thought that it could be a preliminary stage to electro-hypersensitivity. I only understood this when it was determined that I suffered from electro-hypersensitivity.

I have now reached the conclusion that my electro-hypersensitivity was brought on by the fact that I was constantly exposed at home to microwave radiation from the transmitter. (Letter 295)

*

With regard to radiation from cellular phones: I owned a cellular phone at the time the problem emerged. On one occasion I experienced pain in my head. It felt like a blow within my brain. I became somewhat concerned. Within a few weeks, the problem described arose. At the time, I considered both monitors and cellular phones to be the triggering factors. Accordingly, I stopped calling on cellular phones and since then do not own a gadget like that. (Letter 379)

*

In January 1998, we received a letter from the local housing authority informing us that they wanted to build a new mast and a technical shed on a site approximately 90 meters from our house, located in a residential area. This inquiry went out to our closest neighbors, since according to the current development plan the land may only be used for parks or gardens. A mast had been located at the same location for approximately 15-20 years. One neighbor wondered whether it might disrupt TV reception, but otherwise we didn't think it would cause any inconvenience. The letter did not say a single word about what the mast would contain.

⁹ Brominated flame-retardants are chemically and biologically very active, e.g. they are photo-toxic.

The new mast was erected a week after midsummer and in the middle of July, during the summer break, I began to feel ill. I woke up in the middle of the night due to a tingling sensation in my skin and a headache, and I was drenched in sweat. There was pain in my joints, bone structure, muscles, rashes on my arms, and I became tired and had trouble concentrating. My whole body came to a "stop". I walked around the house at night, trying to find the place where I was least bothered. When I was in town, I noticed that I felt ill in the vicinity of fluorescent lamps and large speakers. The only change that had occurred in my environment was the new mast. (Letter 377)

Other high frequency radiation has also been reported as causing electro-hypersensitivity:

Became sensitive to magnetic fields in connection with a MRT X-ray of the brain in 1986 and 1987.

During the examination: blazing light fireworks-display, increased noise in my ears, spasms, shooting pains, prickly feeling. Afterwards: nausea, chills, diarrhea, a burning sensation like that of pepper in my throat, difficulty in breathing, developed a new unpleasant asthmatic cough. Contractions in the back of my head that felt like an anthill. Groggy, total lack of energy. This lasted approximately two weeks, and then subsided.

During two days of testing hearing aids in 1992, experienced acute head pain, nausea, vomiting, rattling in the left ear, stiff neck, shoulders, back. Intense disorder of the thyroid gland. Bleeding in the throat for three months. A hearing aid was out of the question. (Letter 192)

*

During the following year I underwent many ultrasound treatments and had many X-ray examinations, such as plane X-rays of the base of the neck (at least 3 times), CAT scans (2 times), magnetic X-rays of the base of the neck, skull (4 times), EMG¹⁰ (2 times), pain-killing injections in the neck during X-ray (2 times).

After having undergone a magnetic X-ray in January 1992, I haven't been able to eat or drink anything warmer than body temperature. After the pain-killing injections in the neck during the fall of 1992, my condition deteriorated. At the end of November, I had difficulty swallowing. I became forced to eat only liquid foods.

In May of 1993, I underwent an X-ray during a dental appointment. After that appointment, I get a cramp in my hand and extending into my body when I turn on the stove. My condition kept getting worse. I vomited, felt dizzy, suffered cramps, balance disorders, shortness of breath, palpitations and finally, I couldn't swallow. I had an intense battery-like sensation in my mouth – my saliva tasted bitter. (Letter 246)

*

I developed electro-hypersensitivity when conducting combustion research in a locally built combustion reactor, built as a large magnet coil. The reactor was located in a cramped, dirty room with two old computers to help monitor it.

Another contributing factor was all the amalgam in my teeth, plus all the work with toxic substances, pesticides and solvents.

The electro-hypersensitivity manifested itself as severe influenza. It occurred one day at work when I was analyzing specimens with mass spectrometer, a high-tension instrument with a powerful magnet. By the next day I already knew I suffered from electro-hypersensitivity. (Letter 266)

*

I became electro-hypersensitive in 1992, when my employer built a radio mast outside of the building. The cables to it were drawn down along the ceiling of the basement, close to a water pipe. The basement ceiling also served as the floor to my room. We knew nothing about this when we became ill (there were two of us who became ill), but it came out when the administration contracted a consultant to measure the radiation from the computer monitors, which we thought were the culprits in the drama. (Letter 1)

*

¹⁰ Electromyogram.

Back in 1978, I first felt the high frequency field from my transmitting equipment. I knew nothing of the risks at that time. At the beginning, my problems were harmless, but they became progressively more severe: Nausea, dizziness, headaches, visual problems, balance, memory and speech, depending upon the strength of the field. The problem first occurred at 145 MHz and thereafter, in order, on amateur bandwidths 28, 21, 14, 7, 3.5 and 1.8 MHz. I mainly sent telegraphy at high speeds but also made use of SSB¹¹ telephony. On VHF 145 MHz, I only used FM telephony. On the high frequency bands, my transmitter power was high, the antenna configuration large.

After a while I also became hypersensitive to low frequency fields as well as TV and computer screens, fluorescent lamps, cellular phones etc. In the course of time I also developed severe heart problems, which were significantly related to being exposed to EM fields: Very strong atrial fibrillation in which the heart rate reaches up to 230 beats per minute and where the heart races completely out of control. (Letter 22)

In the chapter dealing with chemicals, the possible connection between electro-hypersensitivity and various chemicals is reported by many letter writers. Here are excerpts from a few letters in which dental work triggered electro-hypersensitivity:

I have been employed at the National Social Insurance Office since 1975 and work fulltime. On April 13, 1991, I developed electro-hypersensitivity. (Two days before, my dentist had removed the next-to-the-last amalgam filling. My dentist noted at the time that my face had broken out in a rash, which was documented in the journal.)

After three hours working with a computer on April 13, 1991, I became dizzy, nauseous and felt a burning sensation in my cheeks. I wasn't able to work on the computer for the rest of that Friday. On Saturday, both of my cheeks were flushed. The Monday after, I was only able to work with the computer for 20 minutes. On Tuesday I developed the same symptoms after 5 minutes computer work. After that, I was unable to work in those premises, since there are also a great number of fluorescent lamps and electrical equipment there. I began working out of a small cottage in our backyard at home. (Letter 182)

*

In my case, the whole circus began with an unsuccessful tooth filling. The old filling had fallen out and a new one was to be put in. I had a toothache immediately after the dentist appointment, but thought it would go over as it usually does after having a cavity fixed, but not this time: It was at the beginning of the summer of 1988 and we were about to go away on vacation. Four weeks of camping in the mountains was planned. Instead, it was two weeks of torture.

After that, my difficulty with electricity began, slowly at first, but after a while the problem accelerated at a tremendous rate.

In any case, I was placed on sick leave by the company doctor, who also contacted the safety engineer at my workplace. After consultation, we agreed that, together, we would try to discover what it was that affected me in this way. By means of a pure provocation study at the workplace, the only conclusion we could draw was that the problem arose in connection with electric devices, such as computers and fluorescent lamps. (Letter 257)

*

All my problems began after my dentist removed too many fillings at the same time without protection. I had 43 m mol mercury in my blood for three months after removing the fillings. I became very ill after the treatment, had no energy, was completely worn out, very hoarse, had intense tremors in my head and left arm and couldn't walk. In connection with the removal of the fillings, I became electro-hypersensitive. (Letter 353)

*

I became sick in 1991 at the age of 43, and two doctors confirmed that my symptoms were the result of amalgam poisoning from my teeth. After a careless amalgam removal by an ignorant dentist, my condition worsened considerably and I was forced to wait an entire year before a different dentist could complete the removal.

¹¹ Single Side-Band, a radio standard.

During the amalgam removal process that took place over the next two years, when, among other things, I had various plastic fillings and a titanium bridge put in, electro-hypersensitivity began to make itself known and I grew worse and worse in the presence of electromagnetic fields, such as by ovens, when ironing, the TV and in stores with fluorescent lamps. I became dizzy and befuddled, there were burning sensations and cramps, and my blood pressure rose. At most, it was measured at 210/130. Without being exposed to electricity, my blood pressure is normal. (Letter 20)

*

I returned to my usual job as a nurse anesthetist, and after a few weeks felt myself to be problem-free. I of course tried to stay away from all electric equipment a nurse anesthetist is surrounded by, such as cordless telephones, dimmers, photocopiers, microwave ovens and so forth, but I noticed that the day after using a vacuum cleaner, electric power saw and my own computer at home, I got a headache and pain in my teeth.

My company doctor thought it looked like a clear-cut case of electro-hypersensitivity, and on account of the obvious suffering I was going through due to my teeth, he encouraged me to have the amalgam removed from my mouth.

The amalgam removal began in the spring of 1994 following all the approved recommendations. I had amalgam removed from four teeth, but as I lost trust in the dentist I was seeing, I continued the removal with my regular dentist. He didn't take any protective measures since he didn't believe in that sort of nonsense, and he "sanitized" 16 teeth in 11 weeks.

That was my biggest mistake, and I let it happen. I lost my sense of smell, developed ventricular arrhythmias and I saw flashes of light in my eyes when I moved them sideways. The ventricular arrhythmias went away after about a year, the flashes of light are starting to go over now, five years later, but I still have no sense of smell. (Letter 19)

*

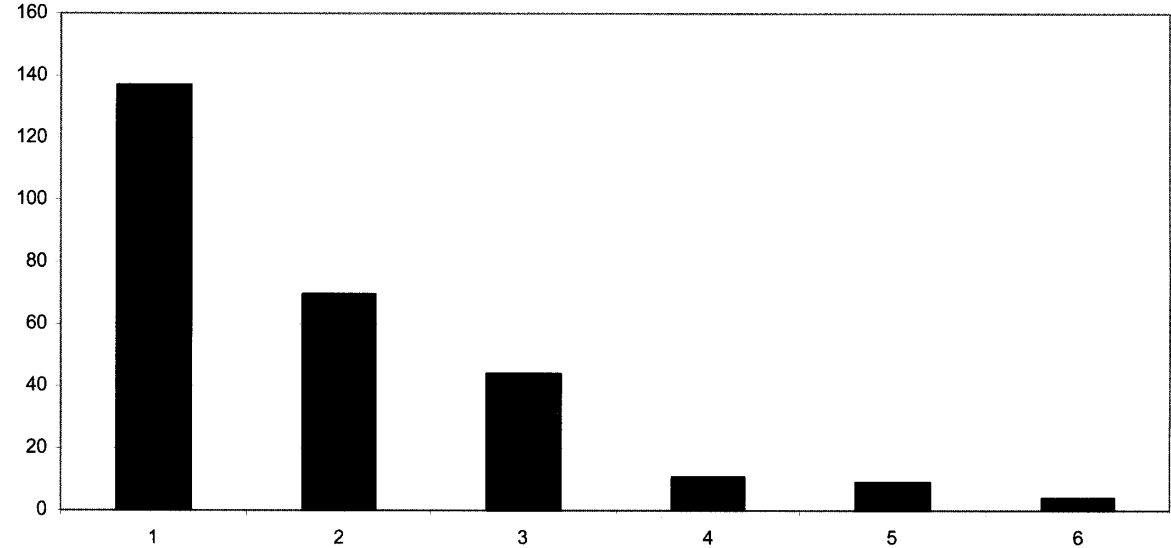
My symptoms began in back in the 1980's after putting in two gold bridges, manifested by things such as respiratory problems, problems with concentration, pain in my jaws as well as a metallic taste in my mouth. The symptoms grew worse in 1992 after a root filling, with severe swelling and redness in my face, and I became very sensitive to light. (Letter 412)

*

In 1986, my dentist decided that eight root fillings had to be fixed. Gold crowns and gold dowels were put in, and the job was finished in 1989.

I began to feel a burning sensation in my mouth; I developed blisters on my tongue. I worked at a reception desk with computers (since 1986), alarm central, telephone switchboard. Noticed that the pain in my mouth increased when working by a monitor, my skin had a burning sensation, my face became red, my eyes became gravelly. These symptoms disappeared as soon as I left the monitor, at least at the beginning... (Letter 294)

Diagram 1. Factors that trigger electro-hypersensitivity (according to the letters to RALF)



1. Computers, 2. Presence of amalgam/amalgam removal, 3. General electricity + fluorescent lights and low-energy lamps, 4. Cellular phones/masts/telephones
5. Chemicals, 6. Photocopiers.

What Causes Symptoms?

After a computer course, I was very ill for about three months. By making use of an absolute minimum of electricity and not watching any TV at home, I slowly returned to something resembling a half-normal condition. Since then, I have been working as a personal assistant. I chose people who didn't own computers and such. But soon I won't be able to continue because of all the cellular telephones. (Letter 17)

Once one has contracted electro-hypersensitivity, it is no longer just the triggering factor that produces symptoms, but also other sources of electromagnetic fields, of the most varying types (also see diagram 2, page 24):

I could feel the TV set, electric oven, fluorescent lamps, light bulbs that were lit, the telephone, other electric appliances as well as buses and the commuter train. (Letter 43)

*

I have different problems from different fields and installations. They manifest themselves at differing speeds and last for differing lengths of time. There are also delayed reactions. The problems manifest themselves on the side of the body closest to: the typewriter, TV, fuse box, electric outlet, district-heating pipe, fluorescent lamp, etc.

The biggest problem with our house is the magnetic field from the district-heating pipe and an electric cable located next to the wall of the house, which makes it hard to find an area inside the house that is free from electricity. The district-heating pipe enters our house along both its length and width, and then continues through our backyard. I can only stay in one corner of the room located the farthest away from the district-heating pipe, and then only when all other electricity is turned off. My bed is placed in that corner. Many times I have been forced to stay in a mobile home in the parking lot when the current in the electric cable has been overly strong or when the family has had to prepare food, wash clothes and other such things. (Letter 230)

*

Since the spring of 1993, I have spent 2-4 hours almost every evening in our mobile home, since that's when electricity is needed in the house. Above all, it's difficult for my family (husband and two daughters) that I still can't tolerate light bulbs. The only form of lighting I can tolerate is from candles. Since I can't take the battery being on [necessary for the water pump for the heating system] in the camper when I'm there, I have to try and stay warm by means of heating candles. Not so easy during the wintertime. (Letter 246)

*

My problems are at their worst when I work with computers and when I'm in an environment with fluorescent lamps. But I am also sick in my home environment.

At home, I only have light bulbs, and no light source close to where I sit. At night, I pull out all the electric contacts in the bedroom. I try to have as few electrical appliances as possible. In general, I make sure to be outside as much as possible and see to it that I'm in environments that are detrimental to me as little as possible, such as stores, museums, public premises. (Letter 329)

Many persons who are electro-hypersensitive also react to light.

Light hypersensitivity is the worst part; electric fields can be removed, but it is almost impossible to live without light. Even relatively weak light in the end leads to a burning in my face and then spreads primarily to my back. Indoors, even daylight causes similar symptoms, but very little when one is out of doors! (Cloudy weather). Direct sunlight in larger doses should however be avoided. Exposure to light also results in a high frequency tinnitus-like noise in my ears. (Letter 45)

*

I have been working with monitors since the end of the 70's and have had constant headaches and recurring depression. The skin in my face has undergone a change. It is hard and rough. It feels like "sandpaper".

In 1977, I move to a house with direct acting electricity, and a power line a few hundred meters away. I go on sick leave in 1986 due to depression and feel much better. When I return to work in October 1987, I spend a lot of time working with a monitor. My face starts to hurt. I have the amalgam removed from my teeth in 1989.

Due to constant depression, I am given a referral (the spring of 1990) to St. Görans Hospital for light treatment. During the summer of 1990, we repaint our house, so I am out of doors a great deal, and in August I feel better than at almost any other time in my life. I question whether I should continue with light treatment and am told that I should as a preventive measure for the coming winter.

After only three or four treatments I start having crying fits. You sit in a small room with 24 long fluorescent lamps on the ceiling. I get worse and worse and am now given more light treatment since I feel so poorly, until we realize that it is the treatment that is making me sick, and it is discontinued.

I feel poorly throughout the winter (1990-91). I also became hypersensitive to light after the light treatment. (Letter 359)

One of the letters gives an example of how electro-hypersensitive persons can act as electromagnetic field detectors:

The secluded and electricity-free cottage

A person suffering from electro-hypersensitivity was offered the chance to rent a cottage deep in the forest, far from any neighbors. The cottage had been connected to the electric power lines thirty years ago, but these were now disconnected. The power lines were situated approximately 300 meters away.

The first day, the person sat outdoors for several hours and came to the conclusion that the environment was good and that it didn't cause any problems.

The next day, the person tested the indoor environment. After just a short time came the comment, "I can't stay here".

When measured, the old electrical installation that had been left proved to be a perfect antenna for high-frequency airborne signals!

Once the electrical installation was dismantled, the problem disappeared and the situation has remained stable for four years.

Unfortunate change of windows

A person suffering from electro-hypersensitivity worked fulltime thanks to a workplace that had gone through EMF-reduction. The conditions at home were also good for the same reasons.

The person lived in a housing estate in which it came time to renovate the windows. The housing company chose to switch to energy-saving windows. These came with frames and window-frames made of aluminum, and the glass had a reflective thin metal-layer coating.

The problem began the evening after replacing the windows. The electro-hypersensitivity symptoms appeared at very severe degree. Only the hallway felt somewhat OK.

After some detective work with measuring and other actions, it was determined that the windows now acted as antennas. It turned out that the window manufacturer had already been aware of the problem.

The story ends by the old windows being renovated and put back into place. And that's how the problem was solved!

The train that came

A person suffering from electro-hypersensitivity lived close to the northwestern main railway line. She reported having the usual electro-hypersensitivity symptoms in association with trains going past. What was unusual was that she reacted before the trains could be heard when they came from one direction, but not when they came from the other direction.

The explanation came when Kjell Hansson-Mild¹² informed about interference on monitors in an office in Södra Station in Stockholm. The interference came when trains passed underneath the building. When the trains came from one direction, the interference came well before the train could be heard. But it only happened when they were already under the building when they came from the other direction.

The electric power to the trains is divided into sections, each one of which is served by a so-called booster transformer whose purpose is to minimize the magnetic fields along the tracks. Depending upon where in the section you are, the above situation can arise.

That which appeared to be very odd had a natural explanation. (Letter 299)

Relatively few statements or letters report cellular phones or transmitters for mobile telephony as triggering factors for electro-hypersensitivity¹³. On the other hand, mobile telephony and cordless DECT telephones have proven to be the main scourges for anyone suffering from EHS. Other sources of electromagnetic fields can often be avoided by means of EMF-reduction and by rationing the amount of time one exposes oneself to that which causes symptoms. The microwaves of mobile telephony will soon be everywhere (also see the chapter Electro-Refugees, page 71).

What happened while I was on sick leave was that DECT telephone equipment was installed at my workplace. I only use a regular telephone, but the technology used for the digital system with base stations constantly transmitting, meant that I, who already suffered from serious neurological problems, could no longer tolerate the work environment. I have become extremely sensitive to vibrations, such as vibrations in building structures, desks and vibrating computers.

I try to moderate my symptoms with earplugs in order to shut out the overtones. Things are much quieter that way, since I “hear“ (feel) overtones and frequency control equipment, dimmers and similar equipment. It is well known that magnetic fields cause both noise and vibrations.

I have a hard time being out in the community these days. I can feel the security alarms in stores and at airports and have difficulty going to pharmacies and banks with a lot of electronic equipment. Nowadays, cellular phones and DECT telephones are found where you least expect them. I even had eye spasms and vibrations one night at my cottage in the countryside. It turned out that our new neighbor, who lives 100 meters away, had a DECT telephone.

I can still use a computer for short periods, but I try to limit it, since over the years I have noticed that when my immune system is weakened for whatever reason, the electro-hypersensitivity has gotten worse. My feeling is that I start reacting to new frequencies. My nervous system is detecting the peaks [of the fields], not the SAR¹⁴ values and RMS¹⁵ values that are used to reassure the public and are in all the [scientific] investigations.

During the last half-year I haven't used a computer except in exceptional cases, and I have gotten rid of my flaming red cheeks and my red nose. My eye doctor thought that I should begin a cortisone treatment extending over several years for rosacea¹⁶, but my problem, which I tried to deny myself, is that in fact I can't tolerate computer monitors. (Letter 283)

*

I can make sure I stay away from electricity by means of unscrewing fuses and the like. It's more difficult with microwaves; I can't turn them off and they penetrate everything. The masts along the roads make it so that I can't travel anywhere, I convulse and get extreme burning sensations in my face, in addition black spots appear before my eyes.

¹² K Hansson-Mild is now (2004) professor at National Institute of Working Life, NIWL and at Örebro University.

¹³ This was true when the RALF letters were collected. Today, mobile phones or other wireless equipment are very common triggering factors.

¹⁴ SAR = Specific Absorption Rate (W/kg) a measure of heating effect of an EMF-exposure.

¹⁵ RMS = Root Mean Square, a common method for the calculation of mean levels of exposure.

¹⁶ Rosacea is a skin disorder.

Cellular phones, which so many people use while walking around, cause the same problems, but it begins with a horrible headache. It takes many hours/days to get over it. Base stations, which are situated everywhere and penetrate everywhere, make it so that at times I have to escape from my home, since they obviously update/install new functions from time to time. (Letter 215)

*

Some of my experiences with electro-hypersensitivity deal with microwave radiation, which has become a major problem. You can gain control of the rest of electricity (it can be turned off, moved and isolated). Mobile telephone antennas transmit constantly and penetrate just about everything. If one becomes sensitive to microwaves, then airplanes also become a major problem, with their radar and transponders that more or less knock you out. It wouldn't surprise me if the nervous system of someone suffering from electro-hypersensitivity were overloaded. (Letter 400)

*

After being close to a cellular phone for ten-fifteen minutes, my body turns red (the side facing the cellular phone). The burning feels as though it goes through my body, the pain is unbearable; if I can I have to move away. Even worse is when one's fellow passengers in an intercity bus have cellular phones turned on. I have asked many people to turn their phones off. Very surprised, they have turned them off. One man asked me at least four times during the journey, "how could you know my cellular phone was on when I had it in my jacket pocket?" I showed him how red I was on my cheek and arm. (Letter 294)

*

Then came "the cellular phone explosion" and living in town became impossible. I have been living fairly isolated in the countryside in the north of Sweden in a controlled electrical environment for five years now. (Letter 257)

*

I have major problems when I travel on public transportation due to the excessive electric and magnetic fields on the trains, as well as [with] all passengers who have cellular phones. (Letter 383)

*

Then came the next setback. Cellular telephones had made their way into our so idyllic life. Summer guests began to come, and with them cellular phones, to this private road, with a mast situated three kilometers from our house. That was the start of another "hell". The symptoms: disrupted speech ability, breathing difficulties, heart palpitations, difficulty walking. I couldn't stay at home. I had to leave in the middle of the night and go to my son in Lund. This was repeated several times. On one occasion I went to the emergency ward, and was allowed to stay overnight. The tests taken didn't show anything abnormal. The way the doctors treated me was very degrading.

Since then, the neighbors have shown a great deal of consideration for the circumstances. Moreover, we have been allowed to put up a sign with the text: Cellular phone free zone. Permission was given by all the members of the road association. (Letter 355)

*

Cellular telephony is absolutely the biggest problem for us. In the beginning of the 90's going outside was enough to be rid of the symptoms. But the situation today is different. I, and many with me, often feel worse outdoors. The only times I can feel myself to be completely free of symptoms today is in such places as air-raid shelters, with thick concrete walls and ceilings, when the electricity inside has been shut off. In areas where there is no coverage for cellular phones, such as in western Orsa Finnmark, I feel fine everywhere. (Letter 229)

*

At present, when I can tolerate shielded light bulbs and would be able to go to places like restaurants, cafés and other places, the biggest danger comes from cellular phones. Waiting in line at the post office or at a bank turns into an anxious moment due to fear that someone might have a cell phone in their pocket or bag. It has happened too many times and I get very sick for a day or more. For similar reasons, I no longer ride on buses or trains. Likewise, going to my beloved library (which I see from my window), the market place, places for swimming (where I have felt radiation from a distance of 30 meters), school and evening courses. My small allotted-garden, where I once found a sanctuary and felt all right (which I do if there are no people around), no longer provides peace and happiness, since the people around have gotten cellular phones. (Letter 138)

*

Working in our premises that had received extensive EMF-reduction, went without a problem for many years, until a marked deterioration took place (the summer-autumn of 1997). Due to the extremely dynamic expansion of mobile telephony, the microwave dose became too high, so that I could no longer live together with my girlfriend and had to move into to my screened-off workroom. After a few weeks, I could no longer tolerate traveling to and from my place of work; instead, I had to work by means of telework.

In 1997, the municipality revoked the requirement necessitating a building permit for mobile telephony masts less than five meters in height on buildings and roofs. A rapid expansion came from this that resulted in better coverage, which unfortunately for me meant much too high a dose of microwaves. (Letter 337)

*

In the spring of 1999, I was given a subsidized work project at a privately owned garden center. Since I hadn't had any problems with the telephone before, I often answered using the cordless phone. Until something happened and there was a pain in my ear as soon as I used it. I still have this symptom to some extent even with regular telephones.

At the same point in time, my family and I were at a cottage a few kilometers from a mobile telephone mast. I was also there after having been newly afflicted (1996) and *then* felt the place to be an oasis, where my body was completely free of symptoms. There is no electricity what so ever in the cottage.

Now when I was there I didn't feel well, had difficulty breathing and there was a prickling sensation. On the way home, my husband noticed that two smaller masts and one large one had been added, that is to say *five* mobile telephone masts at the same location. I had never reacted to masts before, so several days later we made another attempt at staying at the cottage. We took a short walk in the woods. For a while, I didn't think I'd be able to make my way back. I had trouble breathing, I had severe heart palpitations and dizziness. After we had left, the symptoms died down.

My subsidized work project had to be discontinued, since my "old" symptoms had become intensified, at the same time as new ones arose: pain and a feeling of swollenness in my ear, heart palpitations, difficulty breathing, dizziness and pressure over the top of my head. (Letter 369)

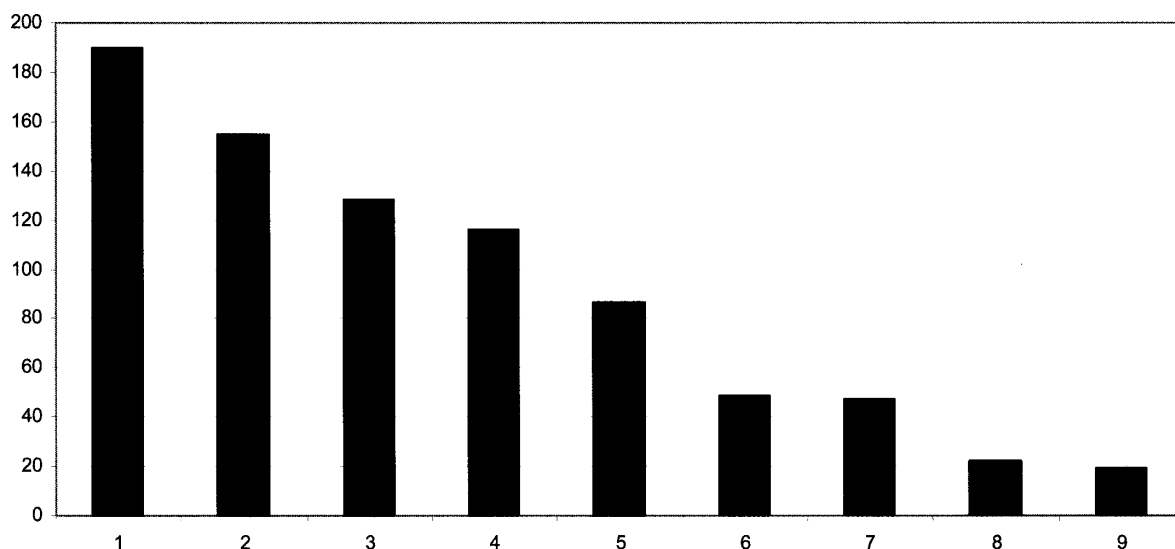
The following letter describes how restricted life becomes for someone who suffers from severe electro-hypersensitivity:

I am 33-years old now, longing to become a mother, longing to settle down with my boyfriend. Those are my dreams. My reality is quite another.

My body and my psyche are completely worn out. I can't visit friends in their homes, stay at hotels, visit my family unless the environment has been treated as to reduce the electromagnetic fields, free from cellular phones and generally free from radiation. I can't use a regular telephone. I can't ride on a bus, subway, commuter train, inter-city train, airplane, motorcycle or car with the exception of a low emission diesel car to work, because of various electrical fields. I can't remain at a regular workplace due to computers, photocopiers, fluorescent lamps, mobile systems etc. I can't go out for lunch because restaurants are full of cellular phones, cash registers, low energy lamps and so on. Nor can I use the snack room's kitchen which consists of an electric stove, microwave oven, coffee machine, refrigerator and so on.

After work, I can't go into the grocery store to buy food. It's filled with fluorescent lamps, refrigerated display cases, security systems and so on. I can't make use of the library, museums, the theater, event halls, exhibition halls, movie theaters, swimming pools on account of all the electronic equipment. I can't go to the hospital or see my doctor due to the electric and magnetic fields that are never shielded. Nor can I go out into the Swedish nature on account of all the radio masts, mobile telephone masts etc. The list can go on forever. My reality is unreal. My boyfriend and I are looking for a house, and that requires an environment that is almost impossible to find. (Letter 311)

Diagram 2. The frequency of factors reported to produce symptoms in those already electro-hypersensitive



1. Computers, 2. Electrical installations, 3. Fluorescent lights and low-energy lamps, 4. Cellular phones/masts/telephones, 5. Radio/TV, 6. Cars/trains/air planes, 7. Chemicals, 8. Photocopiers, 9. Dental work (such as removal of amalgam)

How Was the Electro-Hypersensitivity Detected?

Even though there was a great deal of discussion about being allergic to electricity and the fact that four people at my workplace had already been afflicted by it, I didn't want to accept the fact that it was electro-hypersensitivity. I struggled faithfully on up until one cold, winter morning in 1991. When I turned the computer monitor on, it felt like someone was sticking me with a million needles. It wasn't possible to continue. (Letter 198)

Very few people suffering from electro-hypersensitivity initially understand when their symptoms arise, what the problem is. For many, the realization comes only after they observe a direct connection between computers or other electronic equipment and the symptoms:

My body displayed unusual symptoms throughout all of 1993: my eyes acted strangely, my heart “fluttered“, my mouth was dry, I felt nauseous, I was as hot as a sauna, I had difficulty breathing, there was an unpleasant feeling in my mind, I walked unsteadily, I was dazed to the point that I was almost unconscious. I went to the emergency ward with a pulse rate of 140. The doctor didn't understand what it was, but suspected something in the home environment and therefore suggested moving.

I applied for and received a new apartment, moved in at 2 p.m. and at 4 p.m., when I turned on the fluorescent lamp, all hell broke loose, with the same symptoms as above plus enormous tiredness, ashen skin color, I was on the verge of being unconscious. I finally understood that it was electro-hypersensitivity. Where could I go now, sick both at the old apartment and the new one, with symptoms the doctors were ignorant of and couldn't alleviate? (Letter 233)

*

When the programming course was over, the symptoms became more diffuse and included such things as extreme tiredness. I felt worst the day after doing something like watching TV. It took more than a year for me to realize that my symptoms were caused by electricity. When my TV was in for repairs for a week, I was completely free from symptoms. For example, I was able to ride a bike for the first time in half a year; I was alert and happy again and had no problems sleeping. When I got my TV back, I watched for an hour. There was a prickling feeling in my hand at the time, and the day after I wasn't able to get out of bed.

I then began to suspect that my problems could be caused by electricity, and in looking back saw a clear connection. I understood why I felt sick and had a pain in my ear when I spoke on the phone, why I felt sick when I rode in a car and when I prepared food. I could remember many similar experiences. Electro-hypersensitivity is not an explanation one gives off for no reason; a great number of experiences finally convince you and it is with *great reluctance* you are forced to accept it. I began to be as careful with electricity I could and my life changed completely. All the symptoms that had come over a period of time disappeared. (Letter 130)

*

I studied computer sciences, 160 points, at university and graduated in 1989. I then worked until the spring of 1994, when out of the blue I became electro-hypersensitive. It took one week to go from being completely healthy to being sick. There may have been some warning signal, but it wasn't anything that I detected.

At the beginning, I was at a complete loss. I soon noticed that I felt worse when I was indoors, doing something like watching TV. I had never heard of electro-hypersensitivity, but I saw a connection between electric appliances and a burning in my face, for example. On the other hand, I felt all right when I stayed away from houses and indoor environments. (Letter 381)

*

I began to suspect that electricity could be a part of the problem when, on repeated occasions, I noticed a prickly sensation in my skin when working with a computer. These symptoms became more common and more severe. When I removed the clock radio from my bedside table, the breathing difficulties and the morning tiredness disappeared! (Letter 228)

*

At the end of 1995, I was only able to work half of my normal hours due to tiredness. The cause was unknown. My job was to conduct simulation studies using computers. Over the course of time, the tiredness grew worse and worse, and I became increasingly unhappy. One Monday morning in January 1996, I turned on a monitor and it looked like a stroboscope. It was frightening, but it was also a great relief: so the cause of all my misery was flickering monitors! I was able to continue working fulltime with a 100 Hz monitor. It worked out OK. But after two months, difficulties developed with this solution as well. After a few more weeks, even fluorescent lamps became uncomfortable and tiring. I couldn't tolerate them any longer, but discovered a few exceptions: fluorescent lamps in buses and on airplanes and in a small number of grocery stores that probably used high frequency fluorescent lamps. During the following three years, I worked with no problem as a programmer using LCD monitors and halogen lamps. (Statement 5)

*

How does one realize that it is electric and magnetic fields you can't tolerate? Not when your hands start to hurt after half-a-day using the computer at work; I thought it was rheumatism. A blood test checked that out, and it turned out to be negative. I didn't understand it when the pain also began in my legs, thighs and hips. I thought there was a draft from the window.

I began to suspect something much worse when the pain reappeared when using a hair-dryer, ironing, using a vacuum cleaner and above all when speaking on the telephone. The day it felt like a real flame of fire right in my ear from the telephone receiver really scared me. I worked at the customer service department, using telephones and computers throughout the day. A mass of cables was drawn under the floor that (when investigated later) proved to emit a magnetic field that was much too high. I struggled on but became more and more tired. My blood count dropped by about half. I was placed on sick leave for approx. three months. (Letter 403)

Others discover that their problems disappear when they stay in an environment free from electricity for a while, but immediately become ill again, when they return to their normal environment:

This is how I discovered that I was electro-hypersensitive. It was the summer of 1995, I lived by the sea and a heat wave came. Dizzy and without any energy, I dragged myself down to our boat for a boat ride to a rocky island in the beautiful archipelago. After three-four hours, all the symptoms that had bothered me for two years were gone. I was shocked.

The same thing was repeated for two-three weeks. But each day when I came ashore and tried to go shopping, prepare food at the stove or talk on a cellular phone, I had another relapse.

To me, the connection between electricity and my problems was unmistakable after the experiences of these few weeks. I was happy about my discovery and believed that I would soon become healthy again, now that I knew what the problem was.

Instead, I was soon shocked over the way my doctors reacted when I told them about my insight. They looked down at the table, they looked up at the ceiling, they talked about psychological disorders. They didn't conduct a physical examination even though I complained about heart rhythm disorders, dizziness, headaches and difficulties with my thought processes and memory, among other things. Not being taken seriously gave me a feeling of desperation, when all my senses signaled that there was so much that was wrong with my body. (Statement 1)

*

I have most probably been electro-hypersensitive the entire time without knowing it. At least not until last summer, when I stayed at a cottage that was more or less free from electricity for the entire summer. I was sick throughout the early part of the summer, was in and out of healthcare centers for help, but no one found anything wrong. I felt better during the latter part of the summer and towards the end of the season, I actually felt good.

Later on, during the autumn when I moved back to my apartment with its floor heating, I collapsed after only a few days. I moved out to the summer cottage as quickly and as often as I could, where I regained my strength after just a few days. (Letter 290)

There are those who recognize their own predicament when they happen to read about electro-hypersensitivity in a newspaper or a book:

The bank I was employed at in 1984 was computerized in April 1987. I became ill during 1989; developed large boils on my face, thereafter severe cramps in my throat and was tired in a way I had never been before. I also suffered from "black outs" now and then.

I couldn't understand what it was, since I had never been sick very often. My colleagues thought I had developed an allergy. But then I started reading, and in the magazine "Bankvärlden", saw an article about a woman who looked like me and had the same symptoms, and read they were caused by a computer. After that, there was more written about people who were afflicted in the newspapers and even depicted on TV. (Letter 194)

*

When I first went to the company doctor in April of 1999, it was because of blotches on my forehead. I thought that my symptom could possibly be due to the general stress in connection with a reorganization, but I had gotten through bigger crises in the past, a divorce, deaths, fires and unemployment, without falling apart. I borrowed the book, "Fältslaget om de elöverkänsliga" (the field-battle of the electro-hypersensitive) by Gunni Nordström and Carl von Schéele, Tidens Publishing House, from the library, and it was scary reading. I read it in one go during the weekend of June 23-25. Eureka! All the pieces fell into place. Suddenly, I found an explanation for all of my symptoms, which are the classic ones when it comes to electro-hypersensitivity. To me, there was no question of doubt that I was suffering from electro-hypersensitivity and from being totally burned-out. I strongly recommend reading the book. (Letter 320)

Some individuals are aware of the typical symptoms related to electro-hypersensitivity, or there are others in their surroundings who understand what has afflicted them:

My problems began on the Friday before the sports holiday, almost exactly three years ago. Most of the symptoms manifested themselves within a twenty-four hour period. I put two and two together immediately. At work, I experienced twitching in my face. I then continued my work at home. They had disappeared on the way home, but returned in front of the computer. It didn't particularly bother me; I was about to go on holiday. The family drove up to the mountains in the car. When we stopped to buy something, I suddenly noticed that the ceiling in the store was very low. The fluorescent lamps were pressing down. The refrigerated display counters were warm and cold at the same time. The cash register seemed to be overheated. I had a strong desire to leave the premises as quickly as possible.

Again, most things happened within a twenty-four hour period. We then continued our trip up to the mountains. It was dark, and I could suddenly feel the difference between driving lights and bright lights.

I wish to emphasize this, since one of the theories regarding electro-hypersensitivity is that it gradually encompasses more and more situations in that one transfers the symptoms from one place to another - that one expands upon one's problems. My case proves that this isn't so. I stood there like a surprised bystander with a gaping mouth as one symptom after the other showed up. When it came to the driving lights/bright lights in the car, I hadn't even had the slightest suspicion that this was possible. (Statement 18)

*

The story of my illness began in 1994-95. During the spring of 1995, I worked under a great deal of stress and with a lot of responsibility as a developer/trainer of the production systems that my company had acquired. The work was enjoyable and stimulating and the tasks varied, the possibilities for development good and the contact with coworkers/colleagues at the company rewarding. I was very happy and had the opportunity to influence my work and its direction.

During April-May of 1995, I began to have problems with my eyes. They were swollen and they itched. I sought help at my healthcare center and was given eye drops for allergies. The doctor thought (but didn't take any tests) that it had to do with a pollen allergy, and I thought so, too. During the summer and early fall of 1995, the problem got worse. I had pain in and around my eyes, headaches, memory and concentration disorders. I sought help at the healthcare center, occupational health service and an eye doctor. My eye problems concerned me the most, since my work using a monitor requires good vision.

At this point in time, it had not occurred to me that my symptoms could have been caused by my work with a monitor. I had no knowledge of, nor any experience with, electro-hypersensitivity.

In the late autumn of 1995, my sinuses became congested, I was nauseous and generally felt sick. I went through various tests, allergy tests and the like. All the results were negative; i.e. there were no measurable causes to my symptoms. I worked fulltime, which included some overtime during this period, and it still hadn't occurred to me that electricity could be a cause of my problems. During December 1995-January 1996, the problems were severe, with pain in my jaw and face, severe nausea, shivering and sweating, prickly sensations in my head, muscle pains, a bothersome thirst, abnormal tiredness etc.

In the beginning of January 1996, my top boss (CEO of the company) came and asked how I felt. She could tell that I wasn't feeling very well. She pointed to my computer and asked if it could be the cause of all my problems. I answered that it might be, but it must not be. What I had read about electro-hypersensitivity in the press up until then all seemed quite foreign to me. I had the impression that electro-hypersensitivity was somewhat "strange". She then told me that it wasn't at all a question of people suffering from hypochondria. It turned out that one of her closest friends was electro-hypersensitive. (Letter 406)

*

Among the symptoms were difficulties with concentration, confusion, tiredness and trouble with getting started. The students wondered at times if I was senile. I answered that I probably had "Alzheimer light". It was very frustrating, especially things like my forgetfulness. My memory didn't work, so I had to use my feet. When a colleague at a different school wondered whether I might be electro-hypersensitive and also explained what it was, I began to suspect what was happening to me, and my anxiety diminished once I saw a plausible explanation.

I spent a great deal of time finding out what had been written and researched about this subject. Before, I had been completely unaware of it. It has to be experienced to be understood. You can understand a broken leg, but this... (Letter 148)

What Are the Symptoms?

It began with a prickly feeling in my arms and legs, headaches, swelling around my eyes (edema) and burning, eczema-like rashes in my face Then came dizziness, problems with concentration, loss of short-term memory, pain in my muscles and joints, heart and breathing difficulties. (Letter 307)

The dominating symptom for electro-hypersensitivity is different types of skin disorders (see diagram 3, page 39), at least in the initial phase of the illness:

My symptoms are as follows: Heat, prickly sensation and dry skin on my face and neck. Eczema-like rash on my face. Feeling of heat in my head and in my ears. A feeling of numbness in my face. Burning, pain and dry eyes. Dryness of the mouth, dry lips, pain in my jaws. A feeling of numbness in my lips and tongue. The sensation of a burn injury on the roof of my mouth and tongue, similar to that after a hot drink. Thirsty, difficulties with concentration and tired. (Letter 329)

*

My skin underwent changes over my eyebrows, the bridge of my nose, my cheekbones, chin, the front part of my neck, the tops of my hands and the outsides of my underarms, which resulted in prickly sensations, heat, redness, swelling and itchiness. My eyes felt like they had sand in them, they turned red and I had trouble sleeping due to the pain in my face. After a workday in front of the monitor, my pillow felt like sandpaper against my skin when I went to bed at night.

The monitor gave me sunburn; my friends wondered if I had been abroad, since I had such a nice suntan.

I was placed on sick leave for a while and my problems disappeared, but the redness in my face remained. When I returned to work and used the monitor, the problems also returned.

During the spring of 1991, the problems increased and my condition worsened. The changes in my skin returned after working in front of a monitor for approximately one hour. Later, I also developed other problems, such as headaches, influenza-like symptoms, [and] pain in my face, throat and ears as well as muscle aches in my arms. (Letter 43)

*

I was accepted on a three-month long educational course abroad late in the autumn. At the start there were no problems, but as the fluorescent lamps in the ceiling were kept on for longer and longer periods during the day, the symptoms became increasingly worse. I was able to complete the course. I planned to really “wind down“ once the course was over and to be very careful in the future. This proved to be impossible. No matter how hard I tried to avoid all electric fields, my condition deteriorated. The symptoms I had had before kept getting worse, and new ones arose.

My skin became as dry as tinder. I had to rub my body with olive oil at least once every hour. Regular skin creams from the pharmacy dissolved my skin into a sticky paste, the outer keratin layer of the skin¹⁷ dissolved, leaving the sensitive skin below unprotected. My skin became inelastic, ulcerated and dry. Every movement caused it to crack. I had severe irritations all over my body. My lymph glands were greatly distended. They were as large as walnuts in my groin and armpits. During a period of approximately three weeks, my resting pulse was up to 180 beats per minute. My joints were completely dry and creaked when I moved. My entire body was hurting, mainly because I had a hard time moving and putting pressure on my joints. I had great difficulties sleeping, when despite total exhaustion, I awoke due to ulcerations in my skin on account of dryness and the fact that my joints were painful because of the pressure.

¹⁷ In Latin: Stratum Corneum

My body's thermostat didn't seem to be working. Fits of shivering were replaced by sweating, and in addition, I could sweat on one side and be freezing on the other. The sweat, or rather the moisture secreted, had a stale, somewhat moldy-like smell. My legs were swollen. There were hard nodes in my right and left thighs that were as big as tennis balls.

I underwent the following examinations: Bone marrow test, CT X-ray and chest X-ray. In addition, a lymph gland was removed for examination, as were lymph nodes on two occasions. Nothing unusual could be established.

After being on sick leave for six months, I started working for the same company last July, but was very careful when it came to electric fields. My current medication consists only of Sandimmun Neoral. The symptoms that have arisen during this period are that I get a high, impure, buzzing tone in the back of my head, and at times develop headaches if I get too close to transformers or cellular phones. The situation has slowly but surely improved, although it had deteriorated during the past weeks because of my own carelessness and my belief that I can now tolerate everything. Which I obviously can't. (Letter 228)

Below are several excerpts from letters that provide samples of symptoms in established cases of electro-hypersensitivity:

Headaches, very severe, pain in and behind my eyes, pain in my temples, nose bleeds, dizziness, nausea, numbness, pain and stiffness in my neck and shoulders, "bursting pain" in my arms, aching lymph glands in my armpits and groin, swollen veins, swelling above my eyes (between my eyelids and eyebrows), prickly sensations on my tongue and in my upper mouth, pain in my teeth, pain in my joints, deformed joints, heart rhythm disorders, foggy vision, breathing difficulties, memory and concentration difficulties, difficulties with orientation, stomach-intestinal-urination disorders, pain in my back and kidneys, tiredness, sleep disorders.

I don't have these problems constantly and not all at the same time. The problems I get are the results of what I am exposed to. The difficulties increase the longer I am exposed and decrease when I am not exposed. (Letter 70)

*

When I returned to work in the middle of December 1997 after being home with a cold, the severe nerve pains I had had on and off in my left arm, neck and back returned. I developed difficulties with concentration, severe cramps in my left hand, under my breast, in my jaw muscles, beneath my lower jaw, around my right eye, and in addition, my eyes became very dry. My tiredness returned during these periods. I tried to work in spite of this, but in 1998 I came down with several prolonged bouts of influenza. Despite bacteria cultures and targeted treatments with antibiotics, I couldn't get rid of it. After a tooth pocket between a couple of teeth was discovered and taken care of, the cold symptoms disappeared after a few days.

The neurological problems returned and were now even worse. At Christmastime in 1998, I began to tremble visibly in my left thumb, forefinger and ring finger. It became worse and worse and woke me up during the nights. One night it felt as though I had developed a resonance between brain halves. It felt like a steady wave, a horrible experience. After that event, my ears also vibrate. I tried to explain it to myself by saying that I saw how lamps blinked at a frequency of 50 Hz, those of us with electro-hypersensitivity are supposed to be sensitive to blinking lights, but when I later was out reading in the sunlight and they still vibrated, I realized that this wasn't the case. I vibrated in halves - the left side of my body and my right eye.

My right eye "collapses" and I am very sensitive to light. It's the *cramps* that I get in an electric environment that I can't take. I was able to establish this when, during a gastrointestinal X-ray and endoscopy, I was treated with shots to help me relax, laughing gas and anesthetic infusions. The eye cramps relaxed. A further problem with my eyes that seems to come from the same source is that my eye muscle cannot switch between distances. This means that I also have difficulty reading a text at the first indication of a problem with electric environments. (Letter 283)

*

A compilation of symptoms that I have and have had.

Skin: Redness, swelling, sensation of burning, prickliness, irritation, pain, itching, dry skin, peeling, skin aging.

Eyes: Irritation, pain, foggy vision, double vision, increased tear-flow, sensitivity to light, itching, swelling, redness.

Mouth: Sore, blisters, metallic taste, reduced saliva secretion, tooth aches, crackling dry in mouth and throat, unquenchable thirst, sores on lips.

Ears, nose, mucous membrane: Irritated, congested, runny nose, sore in nose/nostrils, sinus problems, swelling of the throat, hoarseness, lost voice, breathing difficulties, pressure in the ear, tinnitus, pain in the ears, redness and irritation of the outer ear.

Other symptoms: Headache, feeling of heaviness in my head, feeling of pressure in my head, dizziness, problems with balance, nausea, abnormal tiredness, aggressiveness, changes of mood, trembling, spasms, numbness in hands, arms, fingers, legs and feet, cramps in calves and feet, gastric and intestinal problems, pain in muscles, joints, shoulders/neck, elbow/wrist, hip/knee, foot and back, heart palpitations, heart pains, “pins and needles“ in legs, feeling of stress, shivers, heat in body, sensation of fainting, pressure in the breast, difficulty breathing and speaking (I speak very slowly), difficulty with vocabulary. When I write, I forget words and letters, often the first, second, next to last or last letter in a word. Forgetful, concentration problems, hypersensitive to metal, pain and feeling of paralysis in armpits, on arms and breast. (Letter 230)

*

I then developed many ailments that are well known for those who are electro-hypersensitive, including:

- Cold symptoms (I thought I had a cold that never broke out, or else sinusitis)
- Blotchy skin, rashes, swelling in my face
- Heat, irritation, burning feeling in my face, hands and sometimes other parts of my body
- Prickly feeling (crawling), primarily in my face but also in other parts of my body
- Inexplicable tiredness, could sleep almost 20 hours/day
- Nausea
- Dryness in my mouth
- Inexplicable thirst, dry or swollen mucous membranes
- Heart palpitations, pressure over my breast and stabs of pain in my heart
- Concentration problems
- Dizziness
- Poor short-term memory
- Pain in joints and muscles
- Walk around like I’m in a vacuum or in a glass bubble
- Loss of hair
- Pus-filled blister on the soles my feet (the field was in my floor)

(Letter 1)

Many, possible most, of those with electro-hypersensitivity develop a burning sensation in their skin when exposed to electromagnetic fields.

New symptoms appeared during the winter of 97-98. I suddenly developed skin problems from working with my computer. There was burning, stinging and itching on all the exposed areas of my skin. I didn’t think about it much at first; I thought it would go over. But the trouble increased. I had problems with my mucous membranes, sand in my eyes as well as influenza pains throughout my body. At the beginning it stopped pretty soon after I had turned the computer off, but after a while it kept up for the entire weekend. I also came to realize that there was a connection between these new symptoms and the symptoms I had had before.

In spite of this, I tried to keep on working. If I had stopped then and there, I might be healthy today. Deep down inside I probably did understand that I should do something about the situation, but I was just so satisfied with my friends at work, my responsibilities and working hours (75%) that I suppressed it as long as I could. (Letter 352)

*

My face began to burn like after a glorious day in the sun when I was young. I was tired and felt sick. Continued to work the rest of the week with more and more symptoms indicating that something was wrong. Pain in my eyes, teeth, jaws, ovaries and knees. Trembling as if from the shivers when watching TV. Bright red blotches on my throat and arms when I sat close to my work lamps. Went on complete sick leave for two weeks in the middle of march 1997, and haven't worked at the library since. I was able go back working in the school because the students helped out by agreeing to keep the lights off and using handwritten work papers. (Letter 95)

*

At the beginning, I was what one calls monitor-impaired. It felt as if my skin was on fire when I went home at night, I was OK in the morning and then it burned again during the day. What was strange was that the burning was concentrated to my right side. My hairdresser, of all people, said: "What have you done to your head? Half of your head is all red!" I looked around at work: yes, we had lowered the fluorescent lamps on the right side because my eyesight had become so poor. In certain situations, the light was completely white. (Statement 13)

*

I realized that it was serious, but what do you do when no one understands what it feels like when your skin burns? I explain in this way: Light a match, hold it next to your skin, at first it warms, if it gets too close the skin gets burned. A burn blister develops that is very painful, and it goes on for hours. It's the same way for an electro-hypersensitive person who is exposed to more and more electricity; your skin burns more and more until it becomes unbearable. You have to get away from, lets say, the computer, because it feels as though your blood is boiling in your veins.

I was supposed to go on vacation. The sun was shining when I got on the train. As soon as the train pulled out of the station, the regular symptoms began. My skin burned more and more at every station, my heart pounded, my face was bright red. I moved around in the train car, but it still burned just as much. I realized that I couldn't continue my journey. I had to call mom to tell her I wouldn't be home for Midsummer. But I couldn't hold on to the telephone receiver! (Letter 294)

*

My misfortunes began in the spring of 1988 and were probably caused by a combination of a new computer, a great deal of overtime and a tooth infection that resulted in a root filling. It all happened very quickly; a few days after the first symptoms, I could no longer remain at work. There was a terrible burning sensation in my face, and my throat and eyes were extremely dry.

The problems were severe even when I was at home. Pretty soon, I couldn't take any form of lighting whatsoever, not even candlelight. I couldn't endure radio or TV and couldn't even read newspapers or books, since I reacted to the chemicals in the paper or the printer's ink. All strong smells made my skin burn. The worst was the smell from chemicals, but I also reacted to strong fragrances from flowers. There were long, forced evening walks when the neighbors watched TV. At night, I wandered around the apartment with my pillow, trying to find a spot where it didn't burn too much so that I could sleep. During these months, I often thought that I wouldn't be able to survive, but I stuck it out one day at a time.

I associated my problems to amalgam at an early stage, since there was a burning in my fillings and even more so in my new root filling. Removing the amalgam took nearly a year. At the beginning, I slowly got better, although with temporary setbacks after each time a tooth was drilled. Towards the end of the removal process, a few more general symptoms arose, including an irregular pulse rate, muscle pains, numbness and a drop in blood sugar.

When the removal process was complete in the spring of '89, I started to work fulltime again. I did not use a computer in my work, but by the summer I had begun to be careless and stood close to a computer for a while. After a few days, it struck again, worse than ever. My sensitivity to light was so severe that I couldn't even endure daylight indoors on cloudy days. I didn't go out at all for a whole month. After a while there was a slow improvement and in August 1990 I started to work again. Since then, my condition has slowly been getting better. (Letter 103)

Many letter writers develop severe symptoms from all forms of light, and as is demonstrated in diagram 3 (see page 39), light-sensitivity and eye problems are the second most common symptoms exhibited by those suffering from electro-hypersensitivity. There are those who are sensitive to sound as well:

After the nearly five months of experience that I now possess, I am able to note down a few points that researchers should consider:

- Skin is affected by electric fields (V/m) and/or lamps similar to when one has had too much sun. However, this “sun“ shines 24-hours a day and from all directions. Unprotected areas of skin such as the face and hands appear to be affected first, but it later also spreads to skin areas protected by clothing. Initially, I reached the conclusion that the degree of skin injury/burn could be related to the degree the area of skin can be assumed to have been exposed to sunlight earlier on in life – a connection?
- Light over-sensitivity is the worst. Electric fields can be neutralized; living without light is hardly possible. Even relatively weak light eventually results in burns on facial skin and then spreads primarily to the back. Even daylight results in similar symptoms indoors, but much less so when one is out of doors (cloudy weather)! Direct sunlight in large quantities should however be avoided.

Exposure to light also results in a high frequency, tinnitus-like noise in the ears. Clothes made from synthetic material can no longer be worn, since they cause obvious skin reactions.

In American medical books, I have read that photophobia/photo-sensitivity can depend upon an attack by virus/ bacteria/fungi on the brain's protective membrane! Can they also be affected by electric fields? (Letter 45)

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In the autumn of 1998, I began studying at an adult education center, at which time I brought a new rental computer home, with a large 17“ screen monitor. I spent long evenings in front of the computer, which made the problem worse. My eyes became swollen. I developed small blisters on my eyelids, had headaches, and I became extremely sensitive to light. The symptoms became increasingly severe and it only took 20 seconds in front of the computer for me to develop distinctive symptoms. I then stopped using the computer entirely, both at school and at home. The symptoms disappeared after a few weeks. (Letter 160)

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Computers, fluorescent lamps and low-energy lamps were the "gateways", and today I can't endure the sun, having the glow of a light bulb shine anywhere on my body, TV, CD's, cars, refrigerators, freezers etc. A half-hour spent beneath a fluorescent lamp resulted a resting pulse of 125 three hours later, diarrhea the day after and being bedridden. One gleam of light can lead to an immediate need to urinate. (Letter 196)

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There was a burning sensation in my body along with a red discoloration in my face and on my throat and breast. Small red, boil-like balls spread across my cheeks. My vision deteriorated, it felt as though I had sand in my eyes. I had to get new, stronger glasses. Then I discovered that the metal in the glasses gave me eczema. I had to buy new glasses made of plastic.

The place that made me the sickest and produced tremors had an extremely strong field in connection with fluorescent lamps being turned on, and even the tubular steel desk was charged.

I grew worse and worse. I could no longer endure telephone conversations on a regular telephone; it caused darts of pain in my ear as well as headaches. I also began to feel pain in my joints, shoulders, elbows, wrists, hips and knees. I became extremely sensitive to sound and couldn't endure being out in any sunshine whatsoever. (Letter 51)

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In October 1991, I had to stop working and place myself on sick leave. At that time I couldn't endure sunlight, electric light or candlelight, I couldn't use the telephone, iron clothes or use the vacuum cleaner without getting cramps. I developed over-sensitivity to a number of materials and smells (chemicals?). I even began to have a powerful overreaction to sound. My whole life changed. It was a terrible time. During a period of approximately two years when I felt the worst, my immune defense was decreased with regard to the white blood cells ability to respond to the stimulation from PHA (phytohaemagglutinin) and Con-A (concanavalin A). The results obtained from numerous such lymphocyte transformation tests only corresponded to 20 percent of the expected normal value. (Letter 202)

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My symptoms were:

- Respiratory problems; at times I had apnea attacks after spending time in front of a computer and had to will myself to breathe for a few minutes. The same thing often happened when going to sleep if I had spent a great deal of time using a computer during the day.
 - Feeling of faintness, dizziness, muscular weakness
 - My body at top speed, a fast pulse, stressful state of mind, facial heat, burning in my eyes
- After a while, I couldn't endure any electricity whatsoever, nor could I spend any time in the sun. It made me tired and dizzy, my face became swollen as well as my eyelids. (Letter 108)

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A number of people suffering from electro-hypersensitivity also become over-sensitive to light. In part, artificial light from fluorescent lamps can cause problems, but even ordinary sunlight or daylight can be strenuous (photo toxicity). Flickering is of course a factor that should be minimized - flickering is a strain primarily on the brain's processing of visual impressions. Since the symptoms for a number of persons suffering from electro-hypersensitivity are definitely caused from concentration, flickering is a factor that well fits into the pattern of a disturbance in the neurotransmitters and their effect. On the other hand, flickering can hardly explain all the observations regarding monitors or light sources; daylight doesn't flicker. Flickering is merely a side effect in this context. A few persons who have developed severe oversensitivity to light lack the skin's natural defense against light, something that can take years before it returns. I would particularly and urgently like to point out that the so-called HF powered fluorescent lamps, "low-energy lamps", are definitely regarded as problematic by many people with electro-hypersensitivity. Despite the fact that low-light modulation (observable flickering) is low, the field around these is, on the other hand, often high - mainly in the upper frequencies. (Letter 370)

Oversensitivity to light can at times be so severe that the person afflicted is forced to live in total darkness:

There was an article written by couple of doctors from Umeå printed in the medical magazine *Läkartidningen* no. 4/1999 in which they recommend healthcare to postpone issuing a certificate of illness for patients exhibiting these symptoms as long as possible. I would now like to tell my wife's story, who - admittedly at her own request - insisted upon continuing to work, since she loved her job. She had recently gotten her degree as a librarian and refused to accept the fact that she had to protect herself from that which eventually was to become her fate.

It started as a red, triangle-shaped spot on my wife's cheek that became much more predominant after her shift at work and pretty much disappeared after being off for a few days. At the time, she worked in relatively newly built premises, equipped with all kinds of electronic devices. Among other things, she had seven computers and 450 fluorescent lamp fixtures in the room. One can guess which frequencies were used, even if The Labour Inspectorate (Yrkesinspektionen) were unable to register any, since they measured the wrong frequencies. The problems gradually increased and after a while came to include the classic symptoms for electro-hypersensitivity: dizziness, heart palpitations, concentration difficulties and headaches.

About a half year after the first symptoms had appeared, her health condition declined quite drastically, with severe coronary spasms and spasms in her gastric and intestinal tracts. The problems were also now being triggered by strong sunlight, which was difficult for those around her to understand since none of us had ever heard of someone being affected by light.

The oversensitivity towards light got rapidly worse and in the spring of 1999 resulted in her only being able to stay in totally darkened rooms – where it was pitch dark, you can't see your hand in front of your face. This has been her situation for over a year now.

Somewhat later, I came into contact with a woman who had been in the same situation but had recovered by means of high doses of vitamin A after it had been established that her skin lacked protection against light. (Statement 32)

Several letter writers report how different frequencies of the electromagnetic spectrum cause different symptoms. The most severe symptoms seem to be produced by high frequency microwave radiation.

The symptoms that I get from microwaves include dizziness, nausea, weakness, tremors, impaired hearing, tunnel vision, speech impairments, and if I don't make my way to a place with a lower microwave level, eventually unconsciousness. The recovery time after a period of unconsciousness can be quite extended depending upon the exposure, sometimes many weeks.

There are two sources of microwaves that, probably due to their modulation, have a powerful effect on me: mobile telephony and radar and communications systems for aircraft. (Letter 337)

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I was forced to leave our low EMF emission house due to the combined frequencies that arose when a cable TV line was spliced together and also because of cars with burglar alarms and cellular phones, since my blood pressure rose from 160/90 to 240/140 in a few minutes when I was exposed to these fields. Five years later, German researchers confirmed a connection between a rapid increase of blood pressure and cellular phones. This study was conducted on healthy individuals.

High frequency fields also give me kidney problems. In the presence of high frequency microwave fields, I develop the need to urinate and I become thirsty. When going past mobile telephone masts, I have a need to urinate, among other things. This happens all the time. I have no other problems of the sort.

The reason for stating this is to establish the fact that our symptoms are "everyday symptoms", and that's why it's so difficult for society to understand how serious this is and how many people that are afflicted that we don't know about. We develop skin and eye problems, heart conditions, loss of concentration and short-term memory, numbness, paralysis, weakness, migraine-like headaches, dizziness and nausea. But perhaps those of us with electro-hypersensitivity react more strongly, and we don't become better until we get away from the exposure that causes us to feel this way.

I feel that electro-hypersensitivity is a warning signal that should be taken very seriously. I have noticed that the places that make me very ill also cause healthy people to feel poorly. Consider the possibility that we are reacting in a healthy manner towards an increasingly unhealthy "frequency environment" with more and more microwaves due to mobile telephone masts. (Statement 9)

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1995-1997: From slight discomfort (heat) to increasing problems when using a cellular phone.

1997-1998: A great deal of discomfort with severe headaches/nausea/dizziness/numbness during longer conversations (10-40 minutes). In August 1998, I became "roommates" with two computers and four laser printers, at which time I developed daily problems from headaches and numbness as well as difficulties with vision/memory/concentration.

October 1998: Severe pain/dizziness/nausea after a ten-minute conversation on a cellular phone. The day after, at work, I was afflicted with acute and explosive pain/nausea and was taken by ambulance to the hospital where a CAT scan showed an intra-ventricular cerebral hemorrhage with no clear source of the bleeding. At the time I was 47-years old and otherwise completely healthy. The angiography did not show the source of bleeding, an aneurysm or an AVM.

At present, the symptoms after the hemorrhage – reduced short-term memory, concentration difficulties, a feeling of stress, sensitivity to sound/light, reduced capacity for simultaneous activities – have begun to abate. On the other hand, the reaction to cellular phones is constantly increasing (a feeling of faintness with headaches/dizziness/nausea). As for myself, I haven't touched a cell phone since 1998, but have now become a living detector for people whose cellular phones are turned on and therefore have a hard time getting around Stockholm. In addition, I now react in the same way to computers and laser printers (I can't even go into my old workroom, where I worked as a project manager for an information department), for microwave ovens and certain store cash registers/alarm systems. (Letter 133)

The letter above describes a cerebral hemorrhage that doesn't have a normal appearance. The following letter-writer claims that such cerebral hemorrhages have become more common, as have atypical heart attacks:

What I find increasingly worrying is information from medical sources about heart attacks that actually aren't real attacks. The patient is examined many times, but nothing wrong is found. (The possible influence of GSM transmitters?) With regard to cerebral hemorrhages, it is reported that approximately 60-70% of these are difficult to explain (no ruptured blood vessels). Is it a matter of micro-bleeding that is difficult to identify? Chemical/microwaves?

In this connection, I would also like to name common symptoms pertaining to myself and other “oversensitive“ individuals; that we have an intense feeling of the brain being too large for the cranium. (Inflammation, swelling.) The feeling of a lack of oxygen is common, and therefore many remain out-of-doors and sleep by open windows with noticeable improvement. (Letter 148)

Other more established illnesses are also described at times as having an abnormal manifestation:

Eleven years ago when I developed severe electro-hypersensitivity at my workplace after two new computers were installed, my blood sugar began to fluctuate up and down, and after almost 14 days of examinations at the hospital, no explanation for the fluctuations could be given. These continued up until one year ago when it was established that I had diabetes 2.

About a half-year ago we were forced to move to a house outside of town, in which we carried out extensive EMF-reduction. We have now clearly established that as long as I stay in our "EMF-reduced" home, my sugar levels remain very good. As soon as I'm in a less “electrically-friendly“ environment, such as the hairdresser or the doctor's office, or after having spoken on the phone for a short while, my blood sugar level increases dramatically! This most recently happened after a visit to the hairdresser and lasted for three days, during which time I was forced to stay in bed.

There is a great deal written in the media about the increasing number of persons with diabetes, including young children. Environmental factors are suspected of being a possible cause. Can it be that the ever-increasing electromagnetic pollution, or electro-smog, is one of those environmental factors?

One further observation: Persons suffering from electro-hypersensitivity often have heart problems. This can of course largely be attributed to "psychological factors". I have, however, learned that electro-sensitive persons who have had to take heart medicine could completely refrain from this and still feel totally healthy when staying in environments beyond the influence of EMF and microwaves. Can there be a connection concerning cause and effect? (Letter 404)

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On June 4, 1988, the pain in my ear intensified and I lost my sense of balance. Dizziness, nausea and a paralyzing tiredness resulted in my being admitted to the ear clinic at the hospital via the emergency ward. During the night, I suffered from severe breathing problems and a feeling that my heart couldn't keep on much longer.

On June 5, 1988, I woke up with MS-like symptoms. I couldn't move and was moved by ambulance to another hospital with a neurology clinic. There I was placed on sick leave in order to undergo a neurological examination. A positive Babinski reflex indicated a disturbance in the CNS. Otherwise, the tests and examinations indicated that everything was normal; with the exception of a lumbar puncture that showed an increased level of white blood cells that the doctors said indicated an "unknown virus". (Letter 98)

*

I have suffered from a disorder of the endocrine gland since I was in my twenties, which medical science has been unable to correct even though I have been to a number of specialists at a number of hospitals. I have undergone countless numbers of operations for cysts, endometriosis, myoma and pubic symphysis. My pituitary gland, adrenal gland, thyroid gland and pancreas do not work properly.

I have a new type of Cushing's syndrome, a metabolic illness, but do not react to the normal Cushing's syndrome test. I have asthma, allergies and diabetes.

One and a half years ago, I realized that I was also electro-hypersensitive. Knowing what I do now, I realize that this has been the case for many years. There is a clear connection with my endocrine gland disorder. I have always wondered why my body has functioned so irregularly, but I now know the answer. My body is affected by electricity and magnetic fields, and these are constantly changing depending upon where I am, what I do and the weather. (Statement 10)

The writer below does not suffer from electro-hypersensitivity, but was injured by a cellular phone, which she would like to report to the researchers:

In January 1998 I took part in a conference at the Norra Latin School. At one point I walked around outside of the conference room and spoke on a cellular phone for an extended period of time (approximately 25 minutes as I remember it). When I removed the phone from my left cheek, I immediately felt that something had happened – my cheek felt completely numb! It has been that way ever since, and remains so today.

I hoped for a long time that the unpleasant feeling of having a numb, so-to-say "dead", section of my face would disappear. When this hadn't happened by last summer (1999), I went to a neurologist, who examined me thoroughly but couldn't find a reasonable explanation for the injury. I also felt that the doctor didn't place any great credence in my story.

With the exception of this injury, I am completely healthy; I work fulltime and have been lucky enough not to need to take any time off for sick leave. Even so, I am bothered all my waking hours by the constant sensation that a part of my face feels wrong and foreign, a rigid section in every movement that my face makes.

If this could happen to me, it could happen to anyone. Why have there been no warnings given? Or am I all alone? I have a hard time believing that I am so unique. Will my cheek ever be normal again?

Who can examine this kind of injury properly? Who can help me? (Letter 414)

Finally, a letter is quoted in its entirety. In it, the writer shows how one can find a way to live a fairly normal life despite having many severe symptoms.

I began my "career" in electro-hypersensitivity around 1989. The symptoms came gradually: first I noticed that the fluorescent lamp above my desk caused redness and a prickly sensation in my face and that I couldn't stand close to the photocopier (a huge, high-speed monster) for very long. I turned off the fluorescent lamp and brought a work lamp from home. The fluorescent lamps a bit further away didn't bother me at this time. I did have to keep using the photocopier. We produced a newspaper for a junior high school and part of my job was to do all the advertising for language studies. At the time I worked with administration 50% of the time and taught various languages 50% of the time. The photocopier close to my desk was on constantly and there was never any talk of ventilation. We moved in 1989 and I began working as a teacher for adult immigrants. I still have the same type of job, but at another school.

My electro-hypersensitivity began to affect me more and more. I turned red and became nauseous under fluorescent lamps and close to the photocopier – which we teachers made constant use of. I had headaches and difficulties with concentration, I became increasingly “clumsy“ and went to a doctor in 1992, since I was afraid that I had been afflicted with ALS, the illness my father had died from. As of 1992, I have undergone various treatments: first 10 sessions of psychotherapy, which was still popular then, and then had all my amalgam fillings replaced. The new fillings were mainly plastic on account of the cost. Apparently the changeover went too quickly, since I developed symptoms that were outright toxic. When I left the school building, it could seem as though the street was crooked and I didn't know exactly which way to go. I started going to zone therapy and was given prescriptions for numerous minerals and vitamins: I was given herbs to drive the poisons out of my body, I tried acupuncture, healing, qigong, bio resonance with a Biocom machine, more minerals and herbal therapies, intestinal cleansing, saunas - pretty much *everything*. Not having tried these different remedies may have resulted in my being completely devastated. At times, I felt better, at times worse.

In 1997, when the fall term had just begun and the school had moved into new premises in an industrial area, I suddenly couldn't continue any longer. High frequency fluorescent lamps had been installed in the ceiling, the odor of chemicals was suffocating (formerly industrial premises), a large electronics company was located on floor below, a computer corner with 16 computers had been installed and an inflow/outflow ventilation system that blew around the old dust had been installed. A large main power supply box was located outside of the teacher's room. It felt as if my brain was swollen and couldn't fit in my cranium, my tongue and mouth were swollen and my speech slurred, my eyes and teeth burned, I shivered and felt cold. My face it felt as if the trigeminal nerve was infected, there was agonizing pain all the way up the back of my head, my eye and the left half of my face had cramps. I went to a neurologist and was given Clonazepam (Iktorivil). Later, I was referred to a professor who injected Botox into my optic nerve. I also had two brain injuries confirmed: “MRT brain: To the left in the frontal lobe, a fat signaling change with a diameter of approximately 12 mm as an offshoot from the fat above the sinus frontalis. In general, chronic ischaemic changes in the globus pallidus on the left and right sides“.

From August 1997 until April 1998, I was on total sick leave while the school tried to adapt a smaller classroom for me. I have been working half time since the spring of 1998, half of which was at home. The premises still make me sick. The school has shielded all the cables that go through the room and changed the ceiling lighting, but I can't really tolerate all the light bulbs either, which is why the students often sit in the dark for my sake. We could keep the lights off all through the entire sunny autumn of 1999. The school has scheduled my work hours for the lightest period of the day, the computer corner has been moved to a different section of the building and my boss does the photocopying for me. It is forbidden to turn on a cellular phone in my classroom. I have to remind my pupils to turn off their phones everyday.

My school day looks like this: I get to school at 11:45 a.m. and go directly to the wash-room, do what I have to do there and get some water. The air in the building is extremely dry, so I place a bowl of water in the classroom. I can also wash my face from time to time. I have taken a few plants from home, such as succulents, cacti and ivy - plants that are well known for their ability to absorb chemicals. Outside of the classroom are high frequency fluorescent lamps, so I have to run quickly through the corridor and into my classroom. There is no question of a break – I can only be out of the classroom for a short time, so we study for 2,5 hours in one go and then I rush off to my bicycle. I bicycle to school everyday, all year round. I get fresh air this way, which suppresses the heart palpitations and I avoid sitting on a bus full of people talking on their cellular phones. I can't ride the commuter train at all. I do the rest of my half time of work at home: I document such things as ancient monuments of interest for the school and assemble field-trip folders. I am currently studying about dyslexia by a correspondence course, i.e. at home, as a form of continued education. Via The National Social Insurance Office, I have been able to borrow a low emission telephone.

As a person suffering from electro-hypersensitivity, you have to learn to adjust the dosage of your exposure. The worst are fluorescent lamps, low-energy lamps and cellular phones. My reactions take the form of the loss of feeling, numbness/ twitching on the left side of my head, which then spreads down the entire left side of my body, shivering, headaches, concentration difficulties, tiredness, “senility“, swelling inside my mouth and head, a burning sensation in my body, nausea etc. After about two hours in my classroom I feel that I “have to get out and get some air“, but I struggle through the remaining 30 minutes. A school day is the maximum dosage for me. I can't do anything else on the same day - watch TV (an old set from around 1970), go shopping or anything else other than going out for a walk. The symptoms gradually subside out in the fresh air. The fact is that I only feel really good outdoors these days.

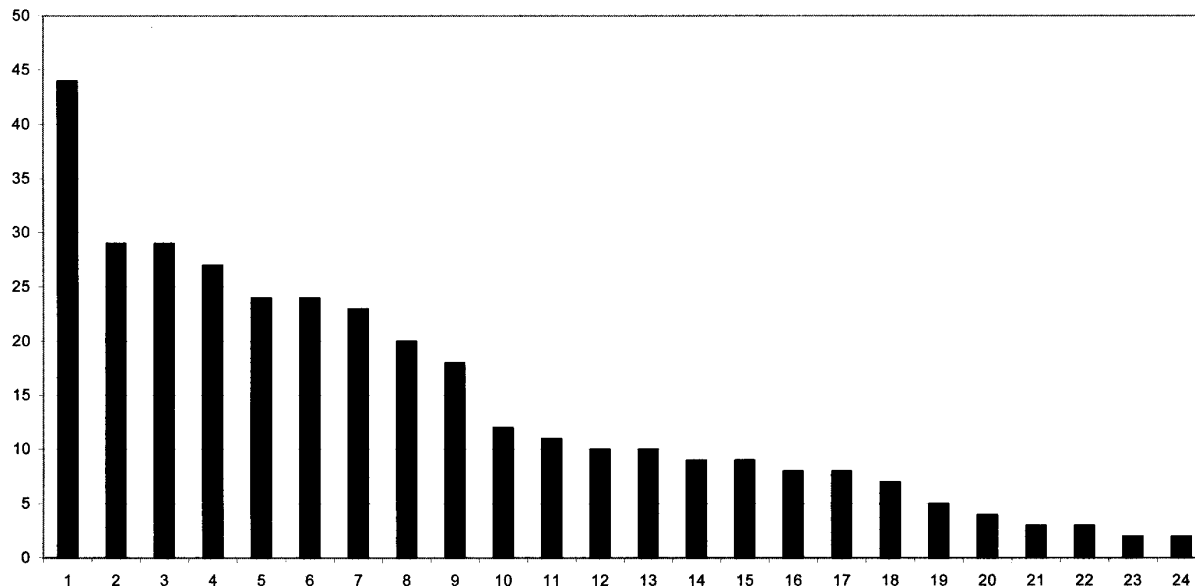
I'm off on Fridays and can then go to the grocery store (if there is no line at the checkout counter) and do the shopping. That's the dosage for the day. I take a queue number at the post office or the bank and go outside to wait – taking care of that business will be the day's dosage. My son does the vacuuming and ironing at home. I don't use a hairdryer or other electrical appliance; the sewing machine is grandmother's old foot-peddle machine from 1921.

Since I enjoy my work, I will keep on trying to get by working half time, if the school allows me to continue on the same terms as at present. I have asked my union representative to try and have two small mobile transmitter masts on the roof shut down on a trial basis and to have the inflow/outflow air ventilation system shut off, but so far, nothing has happened. Due to the poor indoor air quality we keep the window slightly ajar even during the winter, otherwise it would be impossible to breathe there.

Those of us who suffer from electro-hypersensitivity must learn to adjust the level of the dosage we expose ourselves to, that is the only way to live as “normally“ as possible. The only thing that helps is to stay away from electricity as much as one can. This, however, becomes increasingly more difficult in our rapidly developing electronic society.

(Letter 128)

Diagram 3. The frequency of the most common electro-hypersensitivity reactions - where such have been provided in detail (according to letter reports to RALF)



1. Skin problems, 2. Sensitivity to light/eye problems, 3. Tiredness/weakness
4. Heart problems/high blood pressure, 5. Headaches/migraine, 6. Pain in joints/muscles, 7. Dizziness
8. Concentration difficulties, 9. Nausea/general poor health, 10. Memory disorders,
11. Endocrine reactions, 12. Respiratory/lung disorders, 13. Stomach/intestinal disorders,
14. Numbness, 15. "Influenza" /throat problems, 16. Sleep disorders, 17. Hearing problems/tinnitus
18. Tremors/cramps, 19. Anxiety/depression, 20. Haziness/confusion, 21. Fainting/coma,
22. Asthma/allergies, 23. Speech difficulties, 24. Irritability

Chemicals

Today, I can follow a toxic environment-related connection in my life. I attribute the fact that an intensification of all hypersensitivity occurred just as I was undergoing a procedure for the removal of amalgam to mercury. Today, I attribute the intensification [of my hypersensitivity] during Computer Course 1 to brominated flame-retardants. (Letter 195)

In previous chapters, excerpts from letters have been presented in which the writers have already brought up the role of chemicals with regard to their electro-hypersensitivity. Many people with electro-hypersensitivity also suffer from chemical hypersensitivity.

In my case, there seems to be a connection between electro-hypersensitivity and chemical hypersensitivity, which I also have problems with. I am hypersensitive to such things as paint, solvents, adhesives, perfume, smoke. Chemical hypersensitivity seems to trigger pretty much the same symptoms as well as to accentuate the electro-hypersensitivity. I suspect that I came into contact with brominated flame-retardants at work.

I have also had problems with mercury poisoning after the removal of amalgam (removal of fillings 1997-98), with symptoms such as extreme tiredness, major problems with concentration, headaches, aches in joints and tinnitus. (Letter 383)

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From the age of seven until twenty, I lived with my family above a silversmith. On the premises were many types of toxins used in that profession. This probably affected my health, since the toxins contained mercury, potassium cyanide, gold-toning bath and others that laid the groundwork for my hypersensitivity. (Letter 355)

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My electro-hypersensitivity began in connection with amalgam poisoning at the end of the 80's, but I had already become ill in 1986 after three years at a workplace where I was exposed to solvents, various adhesives, including warm-setting adhesives and heated plastic sheeting for door panels. The last year before I became ill, I developed boils in different areas of my body and had to be treated by a doctor. (Letter 241)

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My theory as to the cause of my problems is that it is connected to the air. When it began, we had problems with ventilation; it was 29 degrees Celsius and the air was stuffy and stale. In addition, there is an impregnating plant on the other side of the street, and the office often smelled of creosote. (Letter 28)

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I am an ex-high school and computer instructor and have been working for approximately 25 years with the class collection (30 machines) of ungrounded electric and electronic typewriters and calculators, and later with computers.

The school that I worked at was a so-called sick house. My place of work was closed on two occasions on account of this. The ventilation system was defective, the drainage incomplete, liquid leveling compound was under the flooring, the noise level in the typewriter and computer rooms was very high, there were powerful electric and magnetic fields from the walls and machines and it was suspected that the walls were infected with mildew, etc. All the typewriters and calculators were interconnected by means of electric contacts and extension cords.

The first signs of electro-hypersensitivity appeared seven years ago. After working in the typing room, I had difficulty maintaining my balance when walking. After working in the computer room, the skin around my eyes consisted of large lacerations. I was overwhelmed by tiredness. I spent weekends treating the sores around my eyes with cortisone ointments and trying to recuperate. A social life was out of the question. At times, my face was swollen and covered with sores.

I developed more and more symptoms: loss of feeling, muscle cramps, loss of vocal ability, I had difficulty walking on account of the pain under my feet. Four years after the first indications, I was forced to stop working even though I was already down to half time. I spent all my spare time recuperating so that I could go back to work again. The school had done nothing about lowering the fields in any of the classrooms or the workplace for me.

Occupational healthcare tried to help me as much as possible, but there was finally no choice but to apply for a disability pension. Electro-hypersensitivity could not be the cause stated on the doctor's certificate; rather, it had to be disguised as chronic tiredness, burnout, stress-related problems etc. All of this was true, since these symptoms were a result of electro-hypersensitivity and the situation I was in. An occupational injury was reported to the regional social insurance office, but was not approved. (Letter 40)

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I primarily consider myself to be environmentally contaminated - a synergy – I have poor tolerance for materials used for dental fillings, chemicals in food are a problem, chemicals in furniture such as formaldehyde in varnish and paint cause symptoms as do mold, electromagnetic fields and microwaves, including the waves from cellular phones. Even ordinary foods such as gluten, wheat starch, milk, citrus fruits, and soy can produce similar symptoms. I also react to the sun. Merely having a home to live in has caused and still causes problems. (Letter 300)

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I spent the days in my mobile home, and in addition to electro-hypersensitivity, I was afflicted by the added “bonus“ of chemical hypersensitivity. Accordingly, I do not tolerate printer's ink, lubricating oil or perfume any longer. In addition, I have tinnitus, and I won't be surprised if I come down some other crap besides. I have now had the amalgam removed from my teeth, which was the best thing I've ever done. I feel much better. (Letter 162)

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Very often, in 27 cases out of 45, our clients have been subjected to environments for extended periods of time that can be considered harmful. They have worked with or lived in houses contaminated by mildew, worked with chemicals or been exposed to insecticides, including organophosphates.

It has been our goal to keep the environment at "Elrum" (a rehabilitation facility for those suffering from electro-hypersensitivity) as stable as possible and to control the variables as much possible. During the construction of the facility, we were very careful to only make use of environmentally-friendly materials. Measuring was conducted before we opened, and in addition the empty premises were tested by experts – that is to say those suffering from electro-hypersensitivity. Many of them gave "Elrum" their approval.

But when we furnished the rooms, the same people experienced a deterioration of what they said was the electrical environment, which could not be confirmed by measuring. After a while, we began to suspect that the new, lovely furniture was at fault. Presumably, they contained chemicals that composed the “trigger“ necessary to produce symptoms. (Statement 23)

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I believe that the triggering factor of my electro-hypersensitivity was a malfunctioning photocopier that was situated outside the door to my office. After a number of adjustments it gave off a very unpleasant odor that produced a foul taste in my mouth, so I was forced to keep the outside door open. At the same time, the computer caused a burning sensation in my face and a general feeling of unease. I don't know if it was a coincidence or not, but it might be worthwhile investigating a possible connection between chemicals and electro-hypersensitivity. I seem to recall others expressing similar ideas. (Letter 54)

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In addition to fields, chemicals *cannot* be excluded as an important factor for electro-hypersensitivity. Everything from fresh printer's ink in advertising to the odor of plastic/electronics or perfume can trigger symptoms. What is exceptionally difficult to deal with is that in certain instances, the symptoms triggered can be identical to the symptoms otherwise triggered by fields. Consequently, the same bodily system can be affected by more than one factor. In addition, it may be that fields and chemicals act in unison or are even catalysts. One example of this is research into the brain-blood barrier's permeability, which indicates that radiation comparable to that of mobile telephony can open the barrier to certain substances. This is one example of a possibility in which fields play an decisive role, albeit on rare occasions – one single incident may be enough – to induce a chemical exposure of bodily systems which otherwise would not have occurred. If one is only exposed to either the field or the chemical, it may be that no harm is done, according to this way of thinking; both are required.

Flame-retardants are one of many chemical emissions from electronics and plastic-coatings in machines that can play a role in the concept of electro-hypersensitivity. This conjecture is based upon the experience that most of those afflicted single out a change over to new equipment as the event that induced hypersensitivity.

Foodstuffs are also a part of chemical exposure. I would primarily like to mention the observation that lactose seems to be a negative factor for many with electro-hypersensitivity. Milk increases electro-hypersensitivity; if the intake of lactose is reduced, many individuals experience an increased tolerance for fields. It seems to be lactose, since milk is a bigger problem than yogurt, cream, cheese or butter, in which much of the lactose has been expended. Even egg yokes appear to be a troublesome factor, as are certain additives such as flavor enhancers, coloring agents, preservatives and anticaking agents. Electro-hypersensitive persons often also become very intolerant to alcohol. (Letter 370)

More letter-writers than those above discuss the emissions of various chemicals emanating from new computer equipment, something that they suspect to be the cause of their becoming electro-hypersensitive:

Surveys among SIF's (The Swedish Union of Clerical and Technical Employees in Industry) members in 1993 indicate that monitors are the triggering factor with regard to symptoms of electro-hypersensitivity. Experience from workplaces shows that symptoms start to develop when there is a changeover to a new monitor.

Empirical knowledge indicates that it is a synergy between known and unknown factors. The interaction between EMF - radio/microwaves and emissions of chemicals from the new monitors should be the most likely combination. Factors such as flickering, stress, dry air, high temperatures, noise, lifestyles etc. are additional interacting factors. (Letter 132)

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The problem arose in connection with the replacement of all the computers. Some of the computers had a very unpleasant smell; they had probably not been "burned off". There were five of us (out of fourteen) who became ill. We developed skin problems on our faces and necks, and some also on their arms and hands. My face was completely covered in blisters, it felt as though I had sunburn, plus I had intense shivering spells. (Letter 68)

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Enough about that. I submitted an occupational injury report regarding what happened to me with the new equipment. It was called electro-hypersensitivity. In 1993 I was entirely convinced that chemicals must be involved in some way, so I called up the Swedish National Chemicals Inspectorate and asked: What happens when there is a strong smell at the same time as high levels of electromagnetic fields have been measured? Well, it might be a real mess, was the answer I received, but what do I know?

Well, what can one know, when the matter hasn't been studied?

So after I conducted a survey in which I asked 100 persons suffering from electro-hypersensitivity: "How are you? What have you been afflicted with? How do you perceive your situation?" etc., I have now compiled a new survey that also takes chemicals into consideration. 70 individuals provide answers as to how chemicals may have been involved. I don't claim that it's a question of either-or, because mathematics teaches us that one plus one is always two. But if you take one chemical plus another chemical, it's not necessarily twice as much; it could lead to a catastrophe or they could just cancel each other out.

I think that it is very important to begin to consider the chemical aspect. What I'm hoping for is that each of us takes our share of the responsibility, with all the knowledge that each and every one of us has. I also hope for cooperation. We have to find potential ways of working together, for we all share the same common goal!

And then, my friends, I hope for chemists. It is you that I hope to arouse. Take charge of your knowledge and show all the rest of us! There is a lot to do here! After all, our knowledge of chemistry in professional life is quite extensive.

In the 1990's, IBM admitted that during the first 144 hours that a computer is in use large amounts of chemicals are emitted. Can it be that it is this chemical shower that affects the body in such a way that a reaction is started? Are the electromagnetic fields a sort of a match? Yes, in some way I feel that there are connections. I believe that with the knowledge and experience we possess today we have the opportunity to make a lot more progress. (Statement 13)

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The surveys conducted by SIF indicate that approx. 2%, i.e. 6,000 members, have problems with electro-hypersensitivity in some form or another.

Up until the end of the 90's, symptoms and the measures taken were mainly discussed from the perspective of the electrical environment. The information obtained from the SIF survey shows, however, that the picture of ill health is more complicated than that. A number of factors, such as emissions and dust in combination with the electrical environment, have a powerful affect on a number of individuals.

In certain cases, large amounts of metals were found in the body and the blood stream that obviously contributed to the state of ill health. However, there are many questions that must be answered before we can give accurate recommendations as a part of the preventive process.

In the autumn of 1998, SIF began a project extending over a number of years, "Noll Risk i IT-miljön" (Zero risk in the IT environment). The purpose of the project is to try to stimulate increased research in order to answer the questions. SIF's ambition is in part to initiate research and in part to actively partake in research projects. An example of this is an emissions project conducted by the Universities in Lund and Stockholm with the purpose of determining which emissions occur in computers and monitors. A further ambition is to try to convey the research results to manufactures of equipment by means of cooperation. (Letter 208)

A few persons particularly mention brominated flame-retardants:

My youngest child developed electro-hypersensitivity three years ago, when he was nine years old. I have devoted these past three years to trying to follow the research in the field. If I may summarize what I have discovered, I find the research to be fairly fragmented, with reports about one failed provocation attempt after the other.

I believe that we can all agree that there are two factors that have been introduced into our environment in an ultra-rapid manner. One of them are chemicals, in all manner of form, the other is radiation, the so-called electro-smog in the form of radio waves, microwaves and also increasingly the low-frequency fields in our homes and in our work environments. This area is by definition one in which research is well behind the rate of exposure. People are subjected to these things without anyone really knowing what the effect will be.

No one knows what happens if a person is exposed to electromagnetic fields at the same time as a high concentration of chemicals is present.

I present this line of reasoning because I have so clearly seen the effects certain types of chemicals have on my son. Certain chemicals start the process of his electro-hypersensitivity, which I otherwise feel to be currently under control. These are solvents, adhesives, exhaust fumes to a certain extent, and electronics to a very great degree.

A research project was conducted at the university in which my son's blood was studied. Brominated flame-retardants were looked for in particular, and very high levels were found in his blood compared to other persons.

He developed electro-hypersensitivity when he was in the third grade. The school had been renovated and new, powerful fluorescent lamps had been installed. He was sick for nearly a half-year, during which he couldn't go to school. After the fields of the school were reduced and after we performed EMF-reduction of our home, he immediately became better. (Statement 6)

Most of those who associate their electro-hypersensitivity with toxic influences primarily mention amalgam or root-fillings.

I had my teeth decontaminated during 1988-89 in the hope of feeling better. Since the dentist was completely unaware of plastic fillings and did not want to make use of any protective measures, my whole body turned bright red, I developed terrible heart pain and the pain in my joints and muscles became steadily worse in connection with the rapid removal of the amalgam. I had to use crutches for walking and was hospitalized pending an investigation regarding bone cancer and MS. (Letter 69)

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In the fall of 1986, the problems with my joints began and an unusual feeling of tiredness became more and more pronounced. At that time, I underwent a root filling and had a porcelain crown put in with dental gold under. I already had a good number of amalgam fillings.

In January of 1992, the tooth with the root filling was extracted. Root perforation was established and the inside of the tooth, the gold coating under the crown and the gums had a severe black discoloration. The paralysis on the left-hand side gradually subsided afterwards, and my heart felt much better. (Letter 98)

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In 1990, when I was completely healthy, I sat down in a dental chair to have my amalgam fillings removed. A female friend of mine had advised me to replace the amalgam fillings and put in white fillings instead. She recommended her dentist, since he was supposed to be an expert on white fillings.

This dentist quickly removed twelve amalgam fillings without taking any safeguards whatsoever. On one occasion, he removed four fillings. After a while, I became extremely weak, tired and sick. I developed fibromyalgia, major stomach problems, problems with my kidneys, a great deal of eczema, numbness in my hands and legs and many other symptoms. I also developed severe electro-hypersensitivity and could no longer be in the vicinity of computers, fluorescent lamps or other powerful electric and magnetic fields. Nor could I use a cellular phone or watch TV.

I had many tests taken of my blood, stool and cerebrospinal fluid. All the tests indicated that I had severe mercurial poisoning.

I now had eight amalgam fillings left at the back of my mouth. I received strict orders by experts in the field to go to a different dentist and to have only *one* filling removed every other month.

Nine years have now passed since that fateful first dental appointment, and many of my symptoms unfortunately remain, including electro-hypersensitivity and tiredness. (Letter 102)

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A year later during a dental appointment I had two large amalgam fillings put in (root fillings) with so-called porcelain coverings over. The day after, an unusual tiredness set in, I had heart palpitations and reduced vision in one eye. I also had an increasingly stiff neck that was very troublesome. After a year I decided to have all the visible amalgam fillings removed without touching the "gold bridge" in the hope that I would be able to tolerate that expensive piece of work if all the rest were removed. I had now changed dentists.

After a while I returned to normal, felt better, the stiff neck abated, I grew my food during the summer and made sure to exercise. In December 1993, I chipped one of my front teeth, the tooth next to it was set with a pivot so the dentist recommended a gold bridge. I was skeptical, protested, I had been feeling OK for a while, particularly now that the pivot tooth had also been removed and I had had a "plastic bridge" put in. In February 1994 I was convinced to have a gold bridge put in, the argument being that nothing else lasts and that I already had some gold, tolerated removal and so on.

After two weeks, the suffering began that proved to be seven times worse than before. I became exceedingly tired, lost my short-term memory, became asthmatic and extremely hot and feverish when preparing food for the children. Losing sleep was the worst. In the autumn of 1995 I realized that I had become extremely hypersensitive to electricity as well.

I continued to eat “loads“ of raw vegetables, which are good protection against metals and free radicals, and to change sleeping accommodations. A small cottage without electricity may have been my salvation; I slept better, the stiffness in my joints, which had been marked, subsided, as did the heat in my cheeks. In the spring of 1996, I still felt poorly, changed dentists a second of time, who helped remove the major work in the front section of my mouth. I got slowly better, but electricity remained the major problem. In the autumn of 1998, I decided to remove the amalgam fillings from 1988, the ones with the gold coverings. This proved to be the turning point.

My headache has eased by 80 percent, the electro-hypersensitivity has subsided but is still a problem. I still sleep in the small cottage. I have better use of my legs after replenishing my reserve of minerals. Mercurial poisoning, heavy metals and electricity blocked my joints. I have consequently concluded that my overreaction to electric current stems from the metals in my mouth. Being brushed aside as being healthy by the doctor was a hard blow to take. (Letter 389)

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The primary causes of my illness are clearly my gold bridge, amalgam and the insertion of a copper intrauterine device in 1982. The fact that the authorities have differing viewpoints regarding mercury is inexcusable. The Swedish Environmental Protection Board wants to bury waste products containing mercury deep into the bedrock and have discussed the issues of leakage and toxicity involved in this, while the Swedish Board of Health and Welfare is of the opinion that it is quite alright for us to have it in our mouths. A dentist can be prosecuted if he throws amalgam down the drain but gets paid to put it into people's mouths. (Letter 412)

A scientific study has shown that the magnetic field from some monitors can cause the release of mercury in amalgam fillings:

When the first color monitors made their appearance at the end of the 1980's, a large number of people suddenly became ill independent of one another. They developed a new illness, electro-hypersensitivity. A scientific study (Örtendahl, Högstedt) confirmed that amalgam fillings could release large amounts of mercury in connection with certain monitors. This report has vanished into the scientific silence. The fact is that it confirmed what many people with electro-hypersensitivity had discovered spontaneously, that electro-hypersensitivity had something to do with amalgam and the computer's radiation field.

The report turned into a national economic bomb that threatened to explode. Was there a synergetic effect between environmental toxins (in this case the mercury in amalgam) and the computer's radiation field? Has any researcher ever had the chance to document the environmental toxic contamination of someone suffering from electro-hypersensitivity right from the fetal stage? The generations born in the forties and fifties are marked by the enormous toxic emissions of that time.

For reasons pertaining to the national economy, no one wants to know anything. Scientific knowledge would risk bringing the planned global IT development to a halt. But shouldn't those suffering from electro-hypersensitivity be considered as warning signals? Would you remove the warning signal from a nuclear power plant in order to save energy? (Letter 338)

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Amalgam is affected by magnetic alternating fields, which results in the release of mercury. The magnetic fields of certain monitors cause amalgam to release more mercury than normal. The methods of measuring in use at present to establish monitors' magnetic and electric fields are not sufficient to determine how they affect amalgam.

In order to explain the effect, the make-up of the magnetic field was analyzed in detail. Evidence was obtained that supported of the theory that it is the alternations in the magnetic field that affect how much mercury the amalgam releases. Considering that the decisive factor is most probably the alternations, magnetic fields with higher frequencies should comprise risk factors. This also means high levels for the magnetic field's time derivative.

The study showed that of the five monitors tested, two of them resulted in an increased release that was 250-300 percent higher than the control test. Considering the limited number of models tested and that the frequencies used today are probably higher than before 1993, it is more likely that the risk of mercury being released from amalgam has increased rather than decreased. (Letter 180)

One letter writer brought up the time connection between the purchase of a computer and amalgam corrosion as well as developing electro-hypersensitivity:

In the autumn of 1984, I purchased my first computer, a Microbee with the keyboard and computer in one unit and no hard disk; if you wanted to save a text, you had to do so on a computer cassette recorder. After a while, my dentist noticed that my amalgam fillings corroded quite rapidly, and she was given permission from the regional social insurance office to replace the amalgam with gold. This resulted in my having a combination of gold and corroded amalgam in my mouth for a while, and my tongue became lacerated and I had a constant sore throat.

Removing the amalgam made me very sick and had to be discontinued. I was placed on sick leave and grew weaker with each passing week. Most probably, I was already electro-hypersensitive without even realizing it. Electro-hypersensitivity was something I had never heard of. Doctors interpreted my respiratory difficulties and my dizziness as angst and I was referred to a psychological clinic. I myself thought that my problem was psychosomatic. However, the symptoms kept getting worse. It was when a good friend, who had a degree in electrical engineering and was a teacher at a technological college, found out what my symptoms were and realized that I was suffering from electro-hypersensitivity that I was given the chance to get well. One of his colleagues, who was in charge of computers at the college, was one of the earlier known cases of electro-hypersensitivity. (Letter 108)

Finally, a letter that thoroughly discusses the connection between chemical influences and electro-hypersensitivity.

About a year ago, Kjell Hansson Mild said on a radio program that the more he works with the problem of electro-hypersensitivity the more he begins to believe that chemicals are important with regard to the origins of the problem. Journalist Gunni Nordström has raised these considerations in her articles, but it was the first time I had heard it from a researcher. We have seen from the USA and many other countries that many people who are hypersensitive to chemicals become afflicted with electro-hypersensitivity. Often, their hypersensitivity began by being exposed to pesticides and other neurotoxic chemicals (chemicals that are harmful/poisonous to nerves/the central nervous system). The same applies to those who have been injured through exposure to epoxy glue; they have developed symptoms similar to electro-hypersensitivity. We have seen how persons suffering from electro-hypersensitivity in Sweden often develop hypersensitivity towards chemicals and smells. In Dallas, in the USA, a certain Doctor William Rea treats 500 patients suffering from electro-hypersensitivity. Of these, approximately 80 percent are also hypersensitive to chemicals. An association for electro-hypersensitive persons in Munich reports that 95 percent of its members have high levels of chemicals and heavy metals [in their bodies].

Accordingly, we have those who are hypersensitive to chemicals in the USA who primarily consider themselves to be hypersensitive to chemicals (MCS = multiple chemical sensitivity), but in part, they are also hypersensitive to electricity (ES = electrically sensitive). We have those who are hypersensitive to electricity in Sweden and Germany who consider themselves to be hypersensitive to electricity, but at times they are also hypersensitive to chemicals. Similar symptoms – but different names?

Chemicals and hypersensitivity is an interesting story. We have recently heard a great deal about the toxic flame retardants (just as dangerous as PCB) that are emitted from monitors and TV sets. What is interesting in this context is that so many people have developed electro-hypersensitivity in connection with acquiring a new monitor. Monitors emit the greatest amounts of toxic flame-retardants when they are new (although small amounts are emitted even afterwards). I remember a young man who called and described how he developed a burning sensation along with a prickly feeling three hours after he started using his new Mac Classic. It surprised me at the time that the reaction came so quickly, but I understand it better now, when the chemicals are taken into consideration. That's why some companies allow computers and monitors to "burn off" for two weeks in a room with nobody in it. This is in order to assure that the user is not exposed to unnecessary contact with toxic flame-retardants.

At the Wallenberg Laboratory in Stockholm, they have ascertained that those suffering from electro-hypersensitivity have flame-retardants in their blood stream. It has also been shown that five of Dr. Lennart Hardell's¹⁸ cancer patients have flame-retardants in their blood streams. That can provide us with food for thought. How do flame-retardants really affect us?

In the book "Fältslaget om de elöverkänsliga" (The field-battle of the electro-hypersensitive) by Gunni Nordström and Carl von Schéele, there is a very interesting chapter about the company, Svenska Fläkt.

"In 1976, something happened in a factory workroom at Svenska Fläkt in Umeå that is reminiscent of computer screen sickness... When the acute symptoms had subsided, fifty or so of those afflicted developed persistent problems in the form of hypersensitivity towards light, primarily sunlight and strong artificial light from unshielded fluorescent lamps and halogen lamps. They couldn't watch TV, either".

Those are the exact same symptoms that persons with electro-hypersensitivity have, many exclaim. But the big difference is that the workers in Umeå had their occupational injuries approved, those with electro-hypersensitivity do not. What was it that caused these symptoms at Svenska Fläkt? Did the workers made use of computer screens? No, they did not! Had they been exposed to flame retardants or chemicals? Yes, they had been exposed to chemicals, a color powder that contained epoxy, to be precise. (Today we know that printed circuit cards in monitors and computers also contain epoxy.) The epoxy color had spread from the material via a hot-air furnace, in which the color was heated to an extremely hot temperature, to an adjacent factory workroom where the workers who became ill were situated.

The workers in the factory workroom were exposed to large amounts of phototoxic material from the epoxy very quickly, but white-collar workers working with computers are exposed to smaller doses over a longer period of time. Printed circuit boards and their components in monitors and computers are full of epoxy plastic that, due to heating, in part increase their phototoxic qualities and in part increase their rate of evaporation. For example, the evaporation rate increases 165 times when the inside of a computer reaches 70 degrees as compared to a computer at room temperature that is not turned on (18 degrees).

Many of the workers at Svenska Fläkt who were given a disability pension have in some way and for some reason been frightened from or advised not to talk about their symptoms, but there are enough people who are not afraid to inform us that they still cannot tolerate fluorescent lamps and can't watch TV. There may be forces that don't want a connection between electro-hypersensitivity and exposure to chemicals to be established, especially since the same chemicals, including epoxy, are found in the computers on the white-collar workers' desks. Computers are also found in many homes in which children spend a great deal of time. Their immune systems can hardly be benefited by exposure to toxic chemicals.

Some people developed electro-hypersensitivity when exposed to another neurotoxic substance, mercury. There are those who developed electro-hypersensitivity after a single dental appointment. This may sound strange, but when drilling on an old amalgam filling takes place, the body is exposed to a sudden and significant contamination from mercury, a neurotoxic substance – this may be one explanation for the sudden occurrence of hypersensitivity. Just as when persons suddenly exposed to insecticides develop hypersensitivity to chemicals and afterwards sometimes also develop hypersensitivity to electricity.

¹⁸ Professor at the University Hospital of Örebro.

Lucinda Grant in the USA has, by studying the findings of Soviet researchers, shown that microwaves and insecticides affect the body in exactly the same way:

Microwaves and insecticides of the organophosphate type affect the enzyme cholinesterase so that an excess of the nerve transmitter acetylcholine is produced. This results in the overstimulation of the nervous system. And it is in this manner, through an *over-stimulation of the nervous system*, that insecticides kill insects. A few days ago, I heard that an electro-hypersensitive and chemical hypersensitive woman fainted when exposed to a cellular phone. That may sound strange, but *a person who is already toxically contaminated becomes even more contaminated by microwaves*, if we accept the line of reasoning that microwaves affect the body in the same way that toxic substances do.

Electromagnetic fields should then have a toxic effect upon the body. In that case, it may not be so strange for someone who already is toxically contaminated (chemically hypersensitive) to develop electro-hypersensitivity - or vice versa, for someone with electro-hypersensitivity to become sensitive to chemicals and smells. What is interesting to note is that the feeling in Russia is that chemical hypersensitivity is caused by electromagnetic fields.

The same rules apply to all forms of hypersensitivity reactions as for normal allergies – once one has become sensitized, the hypersensitivity can become more general. It can be considered a “spreading process“ that can explain what has previously been pointed out, how chemical hypersensitivity turns into electro-hypersensitivity and vice versa. It has particularly been observed among chemically hypersensitive persons in the USA that *one* chemical can be the so-called trigger or activator (such as insecticides) for hypersensitivity. But a series of other hypersensitive reactions can thereafter follow, towards things such as perfume, laundry detergent, exhaust fumes, printer's ink and smoke. Many electro-hypersensitive persons have also developed these kinds of secondary hypersensitive reactions, which at times also include hypersensitivity towards sound and heat.

It seems to me that the activators or so-called triggers can be chemicals *or* electromagnetic fields. Perhaps one should instead make a general referral to “environmental hypersensitivity“ (MES, Multiple Environmental Sensitivity, as suggested by the German engineer Gerhard Nieman, who works for a German association for the electro-hypersensitive in Munich). Those who are afflicted name their hypersensitivity after the triggering factor. If it is electricity, one becomes “electro-hypersensitive“. If it is chemicals, one becomes “chemically hypersensitive“. If it is mercury, one develops amalgam illness and so on.

But once one has “opened the doorway“ to hypersensitivity (become sensitized), the boundaries seem to be erased and a general hypersensitivity sets in. It can then at times be difficult to distinguish whether it is a chemical or an electromagnetic field that causes the problem; for example when an electro-hypersensitive person reads a newspaper with fresh printer's ink. The problem can be caused by the chemicals in the printer's ink. The initial designation as to the type of hypersensitivity can be misleading. Why in the world is the individual now chemically hypersensitive? Last year he was electro-hypersensitive. That's the sort of reasoning an indecisive doctor may follow.

An individual who worked at a museum and developed hypersensitivity towards formalin received complete understanding (and consideration) for formalin hypersensitivity from the department of occupational medicine. When the individual later developed electro-hypersensitivity – just as those with chemical hypersensitivity did in the USA – the attitude of the personnel reversed entirely. They were not interested in this (interesting) context, and instead gave him a psychological diagnosis.

In summary, it can be said that a Swedish individual, who in general has a positive attitude towards technology, differs from individuals in other countries since in some instances he is contaminated from birth or else over the years has become extremely contaminated by nerve toxins, mercury, and even in his home environment, in airtight, poorly ventilated houses, is contaminated by other nerve toxins such as formaldehyde from construction materials and toxic flame retardants from TVs and computers. Exposure can cause the Swedish individual to be more sensitive to electromagnetic fields. In addition, due to old-fashioned electric systems, he can be contaminated by stray magnetic fields 24-hours a day at home and be more exposed to ungrounded equipment than other people abroad.

Our environment does not make everyone sick. Our genetic make-ups are different so that our ability to resist environmental influences also differ, but it is not unreasonable that we can be affected by the environment in a negative fashion and can develop allergies and different sorts of hypersensitive reactions. There are numerous interesting pieces to the puzzle and telltale clues.

To confidently claim that cognitive behavioral therapy is the only solution to electro-hypersensitivity, which is probably caused by environmental factors, is completely erroneous and dangerous. (Letter 366)

Field Reduction/Rehabilitation

Since almost all of the designers in the division were afflicted, the company launched a dynamic campaign with extensive field reduction and the development of special equipment for the staff. This resulted in everyone eventually being able to resume their professional duties. For myself, I was able to continue my job as team-leader tele-commuting, with visits to my shielded room as necessary. (Letter 337)

In most cases, the reduction of electric and magnetic fields is of great benefit to the electro-hypersensitive. If the fields in both the workplace and the home are lowered, most individuals have been able to continue working. Many employers have been willing to conduct extensive field reduction campaigns in order to keep those with EHS on the job.

Reduction of electric and magnetic fields as well as radio frequency fields are designated "EMF-reduction" in this paper, although EMF usually is reserved for high frequency fields. Sometimes EMF-reduction must "go all the way", that is, electricity is completely removed.

Conducting electric and magnetic field reduction at home has proven to be more difficult. The Swedish Board of Housing, Building, and Planning advises municipalities not to grant housing modification allowances for the handicapped intended for EMF-reduction. Certain municipalities do so anyway; however, denial is more common. In such a case, it is important that the person suffering from electro-hypersensitivity has a good financial situation despite his illness and able to cover the costs on his own.

This letter provides a sample of EMF-reduction measures at home:

My experience of electro-hypersensitivity has been that which can be controlled on your own leads to your feeling better in the long run. For example, we moved all the "heavy" electronic devices from the main building we live in to a separate building 100 meters away. By heavy electronic devices I mean my girl friend's computer, the freezer, washing machine, dryer etc. Only the oven and the refrigerator, both older models, remain in the main building. This means that my girl friend, at least, has the opportunity to continue studying about her main area of interest, electronics and computers, at home – as opposed to only at work.

We also made sure when we bought the building that the electrical system was all right, with uniformly connected phase leads, properly attached to the various electronic devices. Even my "low-emission" telephone is separately grounded via its own grounding rod. It is not enough for the protective earth to be connected to "neutral" the way most people have it connected in their main fuse box¹⁹, because even though it is nearly 100 meters to the next building, I can still feel it if my girl friend happens to plug in her computer the wrong way or if it happens to be plugged into an electric outlet without protective earth. (Letter 257)

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We were lucky and were able to sell our beautiful house. We then had the means to have our summer cottage insulated so that it would be possible to live there all year round. At the same time, we also performed EMF-reduction on the cottage. During the first summer, we carried in water for washing dishes. When we bathed, we poured buckets of water over each other.

During the autumn, my husband built a detached washhouse with a shower far away from the main building. The house is heated by means of firewood. We've purchased a gas camping stove and a battery-driven TV. So far, we can't afford to have a toilet with a buried sewage tank installed, so we have entered the twenty-first century using an outhouse.

¹⁹ Older buildings in Sweden has a 4-lead PEN-system, that means that Protective Earth is connected to the Neutral line in each house. The PEN-system has a potential for generating "stray currents".

Everything we have laid out for in terms of money and in sweat and hard work has lead to my feeling much better again. That is to say, as long as I stay at home and don't make my way into the community. At times, it can of course feel as though I am shut in, but I think that anyone would choose good health and to feel like a whole person. (Letter 268)

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We reduced the electric and magnetic fields in the house, during the winter of 98-99 (shielded wiring, grounded outlets, a special cabinet for the TV, rock-heating in which the heat pump was placed in a detached garage). The cost for the "sanitization" amounted to SEK 350,000. I slowly began to feel better. So far, my husband and I have been able to afford the costs. But with the symptoms of my illness, one needs to have a sound financial situation! If my condition deteriorates or if one of the neighbors installs an advanced electronic system, I may not be able to live there despite all the expenditures (or if things get any worse). (Letter 300)

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We reduced the EMFs of the car and purchased a low emission telephone. We performed EMF-reduction for the house for SEK 100,000 and the summer cottage for SEK 25,000. Things were much better after the field reduction.

Last autumn, after moving back home from the summer cottage, I felt poorly in the house. We finally realized that it was a new electric meter that affected the entire house. The power company was kind enough to remove the new meter and things were better after that, although still not really good.

I didn't feel well in the mornings when I got up. We discovered that the neighbor opposite our bedroom had a rechargeable [wireless] telephone on the windowsill. It's only five meters between the houses. They were good enough to move the telephone to the other side of the house.

I live in an atrium house²⁰, which is not the best thing, since we have neighbors close by on either side. A few years ago one of the neighbors bought a low-energy lamp and hung it over a plant in the living room. That led to high electric [field] levels in our bathroom.

The municipality is going to build about 70 detached houses in an area close by. My husband tried to get a priority position on the waiting list, but the man in charge said no, because there is no such thing as electro-hypersensitivity. (Letter 390)

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I have taken certain measures at home, among other things having a "AC disconnecter"²¹ installed, which means that I can sleep in an electricity-free environment. Fluorescent lamps have been replaced by light bulbs. A TV cabinet (which removes the electric alternating fields and also reduces the electromagnetic fields) was purchased from Liberel²² in Skellefteå. This allows me to watch TV and use the VCR. Earlier, this had been impossible, since my facial skin got hot and started to burn after only 15-20 minutes.

These measures, as well as some others, have resulted in large expenditures for me, and I have not been granted a municipal allowance for home equipment to cover them. (Letter 365)

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Since 1980, we have been living in a house in the countryside, which we built ourselves. It has been free from electricity and telephones since 1991. We have a wood-burning heater and a wood-burning stove. We use candles for lighting, since I can't tolerate kerosene. This also applies to butane gas for extended periods of time, so our butane-driven refrigerator has to be placed out in the hallway. It works perfectly well when the temperature is above freezing. We have the freezer in a small shed about 800 meters from the house. I prepare food on the wood-burning stove during the winter and on a butane hotplate during the summer, since I can open the windows then.

A bit away from the house is a small cabin. Outside of it is a fuse box. An electric cable runs from it to the pump house, which supplies us with water. Inside the cabin are an oven, a lamp, a TV and an iron. My husband goes there to read, watch TV and do the ironing.

²⁰ A type of row house.

²¹ This is a device that installed in the fuse-box, disconnects AC power when there is no load consuming power. The sensing is done with low voltage direct current.

²² Now renamed AMAK.

Our car, which is an older model, free from electronics, has been modified as to lower the electric and magnetic fields. We always try to choose roads with a minimum of railway tracks, power lines and cellular towers. I myself can no longer drive.

Due to all the mobile telephony masts that are springing up like wildfire, it is almost impossible to find an uncontaminated place in which to live. (Letter 271)

*

Over the course of time, we adapted the house and my life so that I was able to get away from electricity as much as possible. I prepare food on a camping stove, all the fluorescent lamps have been replaced by light bulbs, oil lamps are the most common source of light, the wiring has been replaced in some of the rooms, the TV was expelled to the shed, the telephone replaced by a speaker phone, and I have slowly been getting better. I can now go and shop for about 10-15 minutes, I can spend a short period of time using the computer, can be in the house when the lights are on (although not for an entire evening). I have also learned how much I can take and am no longer sick for days after being exposed to electricity. I “only” get headaches (my aspirin consumption is enormous) and I “only” sleep half the next day. I probably won't be completely well until someone discovers the reason why I can't tolerate electricity. But I'm living on hope. (Letter 54)

*

At home, we try to keep the electric and magnetic fields as low as possible by taking the fuses out for machines like the dishwasher and washing machine when they are not in use²³ (when they are, I go out). At night, we also remove the other fuses for lamps and the electric outlets. We have now had the fields of the house reduced by putting in new wiring, shielded cables to the lamps and other electrical appliances and having everything grounded. I now feel better in the home environment. I can also ride past mobile telephone masts without feeling the uncomfortable pinprick in my head that I felt before. I can even prepare food on the stove without feeling the electricity in my arm. (Letter 81)

*

Camping stove, air-hose telephone, central vacuum cleaner, replacement of fluorescent lamps, as well as the grounding of the electric system were arranged. All at my own expense, my home municipality has still not decided if they will grant me an allowance for home equipment. They, as well as the neighboring municipality, received a phone call from some doctor who recommended that they not grant an allowance to those with electro-hypersensitivity because then many electro-hypersensitive people would move there.

I quickly got better.

After that, I never push myself in an electric environment; I get away as soon as it starts affecting me. That's why I'm much better today; I haven't had this much energy in fifteen years. I've been given a new life. Removing my amalgam fillings was also helpful. (Letter 412)

The fact that EMF-reduction of the home is a major aid to those with electro-hypersensitivity is confirmed by one of the county associations of The Swedish Association For the Electrically and VDT Injured, now called the Swedish Association for the ElectroSensitive, FEB:

We are a county association within The Swedish Association For the Electrically and VDT Injured, located in the county of Värmland. It is our experience that the measure that helped our members was EMF-reduction, and then primarily EMF-reduction of the home. We have no knowledge of anyone being helped by cognitive therapy. (Letter 204)

²³ In Sweden, unlike some other countries, fuses are always placed in a central fuse box.

One problem is that it is very difficult to get an allowance for home equipment for the handicapped when it comes to EMF-reduction (see page 50). Not everyone can afford to reduce the electric or magnetic fields in more than a small section of a home, or else they have to try to find other solutions:

When inquiring the municipality about an allowance for home equipment for the handicapped, I was informed no such allowance would be approved. Since I live in a private home, my husband and I paid for the EMF-reduction of one room, the one furthest away from the boiler-room, laundry-room etc. This room is still the only place in the house where I can be.

I have been trying to find a suitable house in the countryside for almost three years without success. There is either a mobile telephone mast or else a power line. (Letter 396)

*

I began sleeping in an electricity-free environment a while back. Health-wise, this has had a better effect than anything else I've tried. (Letter 173)

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After a summer with unscrewed fuses and completely without TV, fluorescent lamps etc., I have little by little begun to return to life. (Letter 141)

*

Now and then we go somewhere without disturbing fields where I can get some rest. It feels wonderful to be spared from a fuzzy brain, tiredness, pain and tinnitus. It takes 24-hours for the [tinnitus-like] noise to disappear. (Letter 271)

*

In order to put up with my current symptoms - burning, prickly sensation in my skin, headaches, nausea, "sand" in my eyes etc. - I have to spend time in the forest, away from all the electricity and microwaves, preferably at least five-hours a day. When I'm out in the forest, I feel I am recuperated to 50% after three hours. If I go camping and am out for two days, I feel I am completely restored. (Letter 55)

*

Every year, in the summertime, I go to a cottage far away from here without any electricity, and am completely healthy there the whole time. There is no electricity in the nearby surroundings. But when I come back home after the summer, I get sick again after a few days. (Letter 172)

Occasionally, EMF-reduction at home can involve an unintentional provocation test:

In the spring of 1994 I applied for an allowance for home equipment, which was rejected. At the time, I lived without any electricity whatsoever in a tent in the forest. In the autumn, when it got dark, I moved home again hoping everything would work out all right, but that didn't happen. I submitted a new application and this time received a positive response. On February 9, 1995 the EMF-reduction was begun; after a few months, the last connection was made. That's when all hell broke loose - it was so terrible that I couldn't spend any time indoors at all.

Trouble-shooting went on for a few months before the problem was located. The connections had been made so that the foil that was supposed to act as the shield instead acted as a conductor for electricity! There were also a number of minor faults; I could feel which room they were in, so the electric company has no doubts as to whether or not I have electro-hypersensitivity.

Everything was resolved in the autumn of 1995 and I am very thankful for the help given me by the municipality, the understanding the electric company showed, my colleagues, family and friends. Today, my electro-hypersensitive condition remains unchanged, which means quick visits to the grocery store one day a week, no electric stove, refrigerator or freezer, no radio, no record playing, being excluded from the community. Worst of all are the cellular phones and the masts that keep popping up everywhere! Cellular phones are the reason why I can't participate in any activities, even if there is no electricity involved or it's outdoors.

Everyone suffering from electro-hypersensitivity must receive help with EMF-reduction - what I can understand, there are no other home adjustments as important as this - otherwise we can't be indoors, remain in our homes; we are like refugees. (Letter 226)

In order for the electro-hypersensitive to be able to continue working, EMF-reduction of the home is not enough. The workplace as well must undertake EMF-reduction measures of more or less extensive nature. The following letter from a union representative describes problems that can arise:

In my job with the work environment, partly as the main safety representative and partly as the central elected union representative, I have not been exactly overwhelmed by matters dealing with electricity during the last fifteen years. We suspect that there are a number of unrecorded cases – the question is how many.

It is my opinion, that the conflicts that have arisen between those afflicted, and those in charge of the work environment, depend more upon the fact that it takes such a long time before anything whatsoever is done. We could save lot of confidence, and carry out more rehabilitation in a better manner, through more information and education to managers and safety representatives. Despite the few number of cases that I have been involved with, I regret to say, that it is more often the rule rather than the exception that conflicts occur or become aggravated by the handicap that electro-hypersensitivity involves with regard to the possibility of fulfilling one's professional responsibilities. Today, nearly all tasks are performed at terminals or with other electronic equipment. The possibility of a transfer to work in an area that is free from fields is therefore nonexistent. What remains is to shield terminals, telephones, lighting etc.

Questions regarding the costs often arise. But that discussion comes up in all matters dealing with rehabilitation. If the regional social insurance office has a limited budget, and the employer does not believe that SEK 50,000²⁴ in EMF-reduction costs will result in higher personnel attendance and production, the necessary decisions are automatically delayed. This is detrimental to both the individual and to production. (Letter 272)

Some letter writers, though relatively few, report how they have had to struggle to get help at the workplace once they have developed EHS. Worst of all, is not being believed. If one does not have permanent employment, the company is less interested in EMF-reduction; it is easier just to not extend the contract or to dismiss the employee for other reasons:

During May of 1990, an investigation of the in-house environment was conducted by the occupational health service at my place of work. I had to ask the principal safety representative for help in order to get the investigation carried out. It showed that there were defects in the ventilation system. The filters in the intake air ducts had been cleaned after I became ill, although prior to the occupational health service's investigation. They hadn't been cleaned since being installed.

The fluorescent lamps that had been set up in December 1987 were installed incorrectly, the phase and ground cables had been mixed up. According to Kjell Hansson Mild, senior lecturer in medical physics, the improper installation meant that I had been sitting in an alternating field that could have been up to one hundred times stronger than normal. This has not been documented in written form, but was orally verified by the electrician who corrected the faulty installation. It was discovered when a painter took hold of a suspension cover to a fluorescent lamp and the ventilation shaft at the same time and received an electric shock. (Letter 256)

*

I have not received any help from my employer, the municipality, which is regrettable. The person from the municipality who measured the electric and magnetic fields was not knowledgeable, receptive or interested.

Being believed is important when you are sick, and that those who measure and conduct the EMF-reduction are knowledgeable within their fields, otherwise it is all a waste of time. With the proper help, it should be possible to go back to work. (Letter 413)

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Immediately after the installation I began to have allergic reactions such as pricking sensations and a burning feeling in my skin when using the computer monitor, and I informed my employer after two days. I wasn't believed; if anything I was chastised. (Letter 282)

²⁴ SEK 50 000 equals about 7000 US dollars.

*

My maternity leave ended in the fall of 1992 and I returned to work part-time. Everything at work had now been computerized. I developed a prickly sensation in my face, redness, irritation, swelling, pain in my joints, difficulties with concentration, etc., and after about seven weeks I was completely beat. I then had blisters on my face and was very worn out.

I was told off by my current boss, who thought it very strange that I was the only one with this sort of reaction and she "personally had a very hard time believing that my problems were caused by a monitor". I went on sick leave, and a computer screen filter was mounted on my monitor. It cost SEK 2,500 and according to my boss, it was an enormous expense, since my problems were psychological anyway. I worked on December 23 and during the days between Christmas and New Year, but I was so sick after New Year that I couldn't stand up.

So, I was placed on sick leave again. I felt I had been offended and was discouraged. There was nothing I could do about my illness. I was on sick leave until September 1994, when I had another child and was on maternity leave throughout all of 1995. During this time I got a new boss and it looked as though everything would work out. The electric and magnetic fields of my room was to be reduced and everything was fine. When I was supposed to start in January 1996, work on my room hadn't even begun. The ceiling had been torn down, so that some wiring could be replaced, and that's where I sat, amongst the mess of construction and without lights, all I had were candles.

After several weeks the room was finished. The safety engineer had measured the field and "the readings were very low". I was given a normal monitor, which was placed in a shielded box and worked in this manner for several weeks. I had a variety of symptoms, but didn't say anything in order to "keep the peace". After a few weeks, my problems began to accelerate. The heart palpitations were horrible and I had trouble seeing due to foggy vision and headaches. I was placed on sick leave again. The safety engineer became increasingly unpleasant. He talked with my supervisor behind my back and told him my symptoms were psychological because the fields in my room were so low.

After some additional incidents, I was told to test a portable [computer] monitor. I could immediately feel if it was turned on or off. There was pain and a burning feeling in my hands and arms. My employer forced me to work under these conditions for three days. I was supposed to be grateful for everything they'd done for me.

At that point, I went home.

The situation became increasingly painful for me. I was forced to go to one rehab meeting after the other. I was forbidden by the work environment secretary to have contact with any EMF-reduction company other than "Landstingsfastigheter" [County Council House Property Management]. The administrator at the regional social insurance office came to my rescue. She demanded that a specialist company be allowed to come and measure the fields in my room. This came about, and the company came and measured *very* high fields! In addition, the portable computer was ungrounded and the keyboard shot [an electric field of] 170 V/m into my hands. That's the reason it burned so much.

My employer and the safety engineer then began to disparage the specialist company. A few minor adjustments were made in my room, but not the measures recommended by the company. Now my employer wanted to get rid of me. I went on sick leave again and my electro-hypersensitive condition had deteriorated due to the failed attempt to return to work. I now have a temporary disability pension that lasts until the end of the summer, after that I don't know what will happen. (Letter 175)

*

The school's technician explained that I was probably electro-hypersensitive, and when we began a closer inspection of my symptoms, I finally began to realize that he was right. I had thought that you had to sit in front of a computer for hours in order to develop electro-hypersensitivity. I was given a referral to the occupational health service and they tried to adapt my workplace, but I was on sick leave for extended periods and I never managed to stay at work more than half time.

For natural reasons, my employment involving the implementation of a project was not extended, and since it is hard to find employment in a school if you can't tolerate computers or fluorescent lamps, I have spent quite a bit of time unemployed. I was temporarily employed on a part-time basis for a few semesters, but when I had worked for three years within the municipality and it was time to make my position permanent, they decided not to extend my employment. (Letter 280)

*

There was no understanding whatsoever for my problems at work. My boss would neither borrow, rent nor purchase a portable computer. He was of the opinion that I should write things out in freehand and submit the manuscript for printing, which meant a disaster from a professional point of view. I finally purchased my own portable computer. I could work in shifts when it ran on batteries.

My boss was totally against my going to the hospital for treatment. As an employee I had the right to go to the doctor on occasion, but not for continual treatment – according to him.

Today I am unemployed due to a shortage of work. (Letter 351)

However, there are many more letters describing how workplaces were prepared to initiate the necessary EMF-reduction measures than those describing a lack of compliance from the side of management. At times, a few changes in the electrical environment were all that was necessary:

I can't tolerate working with an ordinary computer monitor for very long, either – if I work more than two hours, the same problems appear after a few days. I now have a LCD monitor and so far, this has not resulted in any of those kinds of problems. (Letter 262)

*

Today I am pretty much recuperated. After having been on sick leave for two years, I am now able to work half-time at my old place of employment. A few minor changes have been made in my workroom in order to create a work environment with lower electric and magnetic field exposure. We haven't made any adjustments at home other than continuing to unscrew all the fuses that can be done without at night. In this way, the bedroom is pretty much electricity-free.

I live a fairly normal life today, including watching TV, cooking, lamps, shopping and so on. However, I do not use computers other than those with LCD monitors, no cellular phones or cordless DECT telephones. I avoid going past large power lines in the forest and I haven't tried riding trains. After having been so sick that I haven't even been able to be indoors unless the main power lines were shut off, I can now manage a fairly normal life and even to work part-time. (Letter 234)

*

The fact that I so quickly became aware of what was wrong, helped me prevent my condition from deteriorating too far. They took me seriously at work right from the start and measures were taken. Light bulbs replaced fluorescent lamps, I was given a new computer monitor, different occupational responsibilities, etc., which made it possible for me to continue working.

At the moment, it's actually easier for me to be at work than in my apartment. I work in a newly constructed building at the university with 5-wire cables and very good grounding. (Letter 266)

*

After consultation with the regional social insurance office and the company doctor, my employer was able to help me find another job. Today, I work in an older building on the hospital grounds. There are no fluorescent lamps on the way in to my EMF-reduced workroom. Due to my electro-hypersensitivity, I have a special desk lamp; I also have a special computer monitor, a so-called MultiQ display²⁵. I can use the computer for short periods of time. (Letter 48)

²⁵ A low emission LCD display.

Even schools are at times obliged to implement EMF-reduction for students with electro-hypersensitivity:

We don't have computers or watch TV in our house. Our home has had its electric and magnetic fields reduced. The classrooms that our son is frequently in have also been EMF-reduced. This applies to the middle grades, junior high school and now high school. After this, our son has had no problems going to school. (Letter 408)

Often, one has to go to the expense of having an extensive EMF-reduction campaign carried out in order for the electro-hypersensitive individual to be able to continue working:

After a while I felt better, and on October 1, 1990 I began to work half-time. The first thing I had to do to be able to spend time at work was to see to it that the fluorescent lamps were removed from my room and from the corridor. I couldn't use the computer. I tried using a LCD display, but it didn't work.

A project had then started dealing with electro-hypersensitivity and I was chosen as a test person. My room was EMF-reduced, a monitor was built from an overhead projection panel, the PC was replaced, cables were shielded, the desk was replaced by an older wooden model, open bookshelves were replaced by cabinets.

Ten years have now gone by. I get along quite well, often forget that I am electro-hypersensitive and can watch TV. If I am careful, there are no problems. However, I do have trouble getting access to further education on computers and software. Last autumn I participated in a two-day course, which worked out OK. If you just let people know that you are electro-hypersensitive there are usually no problems, alternatives are available most of the time. (Letter 336)

*

I have been electro-hypersensitive since 1995. It began with dizziness, concentration difficulties, tiredness, some prickly sensations in my face, and I felt that it started when I came to work and turned on the computer. I have worked at the same company for many years, am quite happy there and have a very enjoyable job that has developed over the years.

By the time I informed my boss, the problem had become acute. I had severe attacks of dizziness and my difficulties with concentration were also very severe. My boss took it very seriously - and that was my good fortune. An assistant was brought in for three months who took care of my computer work under my supervision. During that time, my condition was investigated and measurements were conducted throughout the office building to find the best location for me. The room that was chosen was EMF-reduced to a tolerable degree while waiting for a planned newly constructed building to be ready. My room in the new building was to be covered with aluminum plate and have shielded cables.

After three months a special low emission MultiQ monitor was purchased, as were a special table lamp and ceiling lighting. A [metal] plate was placed over the electric outlet in my room and was grounded. These measures, plus the fact that I kept away from major electric exposure during this period, enabled me to get started again. In order to reduce the environmental influence on my body I had my teeth cleaned from amalgam - the "sanitization" caused a great deal of problems and my body reacted after each filling was replaced. The third day was the worst - I was very tired and dizzy and could barely stand up. But stubborn as I was, I dragged myself to work.

Slowly, slowly I returned to life. The removal of the amalgam was finished after a year, and moving into the new office area - with an EMF-reduced room.

But I felt that my fingers "tingled" and began to hurt, just as if I were getting small shocks all the time, and I called in the measurement company. Without telling them the reason, I asked them to measure the equipment, including the keyboard, and it turned out that a great deal of emissions were given off when keys on the keyboard were pressed. The solution was to have the keyboard sent in for shielding, and when it came back I was able to use it again.

In addition, my desk is made out of wood in order to avoid electric fields being produced and spread through the legs and supportive steel structure. My CPU unit is now situated in a metal box about 2.5 meters away from me. The box is also grounded.

I am very grateful and happy to have been given the chance to work, but the situation could have been different if I worked somewhere else. I would then probably have gone on a long-term sick leave and been a burden to society; what would I have been able to do without EMF-reduction? I was 26 when I got sick – should I have been forced to give up because society and my workplace didn't want to believe that it is possible to be affected by and get sick from electricity? (Letter 319)

A number of letter writers have flexible working conditions and can distance work from home as necessary:

I have now been working fulltime for four months; three days a week at my workplace, and I distance work two days a week from home. I now have my own room at work with a low emission, thin monitor. I feel better now but am aware of the symptoms now and then, especially during long-term exposure to electric/electronic equipment. The symptoms come after five-six hours. All the signs indicate I am affected by environmental factors at my workplace.

I am very happy with my job, but I am worried about my future and the harm this can cause my body in the long run. It could be that I shouldn't expose myself to these health risks. (Letter 373)

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The help my workplace provided me with included [the company] ScreenGuard grounding the keyboard and mounting a grounded strip on my desk on which I could discharge the [static] charge that had built up on me. After that came SunFlex with a monitor filter, and they assembled the cables in a grounded [metal] basket under the desk as well as grounding the table-stand.

I now work with a Pentium II computer, where the actual computer has been placed inside a grounded box covered with aluminum foil in order to eliminate the electrical fields.

I work fulltime and haven't had to take sick leave for my problems, but when it gets to be too much I go out and take a precautionary health walk, or if it's in the afternoon I take flex-time at home to recuperate so that I can keep on working. (Letter 197)

*

I have minimized the electric equipment around my workplace and had an electrician take care of special installations. I have been met with understanding by my employer at the college, but naturally it is difficult to provide me with a workroom located at least six meters from all the computers, installations with powerful electric and electromagnetic fields etc. This has now been pretty much solved by my working at home. (Letter 157)

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Since almost all of the designers in the division were afflicted, the company launched a dynamic campaign with extensive EMF-reduction and the development of special equipment for the staff. This resulted in everyone eventually being able to resume his or her professional duties. For myself, I was able to continue my job as team-leader at a distance, with visits to my shielded room as necessary.

The subproject manager²⁶ said: "To be honest – the only thing we have found that really helps is EMF-reduction." A psychologist who studied us noted that those of us who were electro-hypersensitive were actually less stressed than a healthy reference group at the company.

Another group of engineers afflicted in a similar manner were the JAS²⁷ designers in Linköping. They used the same brand of computer equipment and at the same time were also exposed to microwaves. The acute problems in this case, were also solved by reducing both the low frequency and the high frequency fields, with good results. (Letter 337)

²⁶ Of the Electro-Hypersensitivity Project, partially financed by the Working Life Fund.

²⁷ JAS is an advanced Swedish military aircraft.

However, sometimes not even extensive EMF-reduction helps:

My employer had the computers in the room I used for instruction rebuilt to lower the fields. I tried to stay there instead of at my ordinary workplace. I tried to keep on working even though I was getting worse all the time. Even my home environment caused problems. I took long walks during the evenings and on weekends in order to build up strength for the work-days. I took a month-long sick leave, during which my workroom, computer and telephone were EMF-reduced. Shielded cables and outlets were installed, and fluorescent lamps were replaced by lighting fixtures with light bulbs.

After the month on sick leave, I returned to work. I managed to stay for two days! On the evening of the second day I could barely stand up. I felt nauseous, as if extremely seasick, with stomach problems and pain in my face as well as a concentrated metallic taste in my mouth.

I have consequently been on sick leave since then, and as of 1997 have a fulltime disability pension. The regional social insurance office provided me with twenty shiatsu treatments during 1996. (Letter 406)

But even when EMF-reduction has improved the work environment, other problems can arise. The person suffering from electro-hypersensitivity can only be in his own workroom and feels isolated and left out:

My room went through EMF-reduction with very good results, but I'm like a prisoner in my own workroom, since no place else has been made low emission. For example, I can never take part in a Lucia²⁸ party or a Christmas party, and it's not a lot of fun when everyone else goes off and I have to stay in my room. (Letter 391)

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When I returned I was given a room that had had its electromagnetic fields reduced, which didn't help me at all. All it took was for me to step into the main office complex for it to begin. In addition, I was supposed to stay in my room and not come out, but I couldn't. I don't function that way as a person. (Letter 218)

There can be many explanations why an extensive EMF-reduction campaign does not have the desired effect. We have seen above how improper connections can increase the electromagnetic radiation. Other factors can also be involved. It is important that whoever conducts the EMF-reduction is aware of the possible complications:

It wasn't until August '97, when I couldn't take it any longer, that I got into contact with our company doctor and the safety engineer. A small-scale EMF-reduction of my office was done – among other things I had my cathode ray monitor replaced by a LCD flat panel monitor. In addition, the fluorescent lamps on the ceiling were turned off. I got much better – to start with – and then wound up getting much worse. The EMF-reduction had not been extensive enough. Suddenly, I was affected by all the electrical equipment in the office. Printers, fax machines, photocopiers, telephones etc. At the same time I grew sensitive to my own home environment. I couldn't tolerate the oven, TV, washing machine, dishwasher, electric household appliances, lamps, etc. I went on sick leave and stayed at home with all the fuses unscrewed, while a major EMF-reduction campaign was carried out at the office.

Unfortunately, the environment at the office wasn't good enough despite the EMF-reduction. The basic environment, with DECT telephones and computers in every corner, was just too detrimental. I still (1.5 years later) haven't been able to go back. (Letter 352)

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Our experience with EMF-reduction using shielded cables has been poor, and we are not alone in that opinion. As electrician Östen Johansson writes in his book "Frekvenskänslig" ["Frequency Sensitive"], we also believe that shielding acts as an antenna for microwaves, and that a house that has been "electrically cleaned", can be even more sensitive to outside influences, such as mobile telephone masts and modern cars with alarms as well as cellular phones. I sometimes have a hard time being somewhere an electrician has conducted EMF-reduction and put in shielded wiring; there is often some sort of "exposure" there²⁹. (Statement 9)

²⁸ A major Swedish holiday.

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All the electricity at home had to be disconnected so that my body didn't "burn up". After a few months with candles, we began EMF-reduction by putting in shielded wiring in the walls and to the lighting fixtures. All of the fluorescent lamps, low-energy lamps and dimmers were removed. The TV was removed as well. EMF-reduction was also carried out at work with shielded wiring, light bulbs and shielded computers with LCD monitors.

The result of the EMF-reduction at home was 100 percent successful. All the other electrohypersensitive individuals we had contact with also felt very good in our house. At work, the EMF-reduction failed, since all too much of my "neighbors" electronic equipment got in the way. In addition, there were strong magnetic fields from stray currents. Also, the metal façade acted as an antenna when the streetlights were turned on, which increased the electric field. However, EMF-reduction did work at a new workplace in a calmer environment. (Letter 249)

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My boss believed me, and a radiation-free monitor was purchased for my sake. I was then able to work on a daily basis without problem. I had had no previous problems with fluorescent lamps, but now began to react to them. I managed by screening off the one closest to my workplace.

At home, I had an electronic typewriter that I had used for many years. I now started to get burning sensations, partly on my face and partly on my thighs under the tabletop, so I had to exchange my beloved machine for a little clumsy battery-operated machine. In order to avoid repeatedly buying batteries, I have an adapter in another room with a long extension cord.

In addition to fluorescent lamps, I began to react to regular lamps if they were situated too close. I then got hold of a table lamp that operates on direct current from a battery charger. It works fine.

At the library, we began to use a so-called pen that scans library cards and the labels in books. The "pen" was supposed to be completely harmless. Despite that, the redness in my face returned. The pen was then insulated with a foil-like material. Thank you, everything's fine again – or so I thought. After a couple of weeks I developed a terrible pain in my stomach. It burned, but nothing was visible on my skin. I am really not a whiner, but the pain under my skin was so intense that I couldn't sleep. I discovered that the cable to the pen ran under the table, right above my stomach. So this too was shielded and after about 14 days the problem disappeared. (Letter 71)

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My health condition kept deteriorating, and the problems got to be so severe that I couldn't stay at work other than for short periods. My employer arranged for me to be able to work at home instead, so the question of sick leave never came up.

At the beginning, the problems were associated with the flickering monitor screen, and alternate monitors were tested. EMF-reduction of the work environment had previously failed, but after new measures were taken in 1995 following the advice of and carried out by competent professionals, my health has improved and nowadays I can be at work on a fulltime basis.

It is my opinion that the EMF-reduction measures conducted in 1995 were necessary in order for me to be able to continue my fulltime employment and to fulfill my professional responsibilities.

My previous residence in an apartment building also had EMF-reduction performed by the same professionals who improved the work environment. The landlord did not implement the entire action package, but the high magnetic fields in the apartment were reduced to the generally accepted level³⁰. (Letter 199)

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²⁹ A possible explanation may be noise induced into the Protective Earth - Neutral line due to "asymmetric loads" as the shielding is connected to the PEN-lead.

³⁰ Here probably meaning the limit of 200nT of the Precautionary Principle for the National [Swedish] Authorities regarding low-frequency electrical and magnetic fields. The document can be found at: <http://www.av.se/publikationer/broschyner/adi/adi478.pdf>

About ten years ago, Telge Energy was confronted with electric allergy/electro-hypersensitivity for the first time when one of its employees was afflicted. It was clear to the management from an early stage that the afflicted individual's symptoms and problems were to be treated with the utmost seriousness. An office room with reduced EMF was set up immediately, which was placed at the employee's disposal.

Stray current is a well-known phenomenon in electric installations using a 4-wire system. It is not uncommon that pipelines for district heating and water act as "unintentional" return conductors for electric current. In simplified terms, this is due to the fact that electric current always takes the "easiest" path, which is why water and district heating pipelines in buildings can act as return conductors, since the area is much larger than in the intended electrical wiring. Therefore, electric and magnetic fields often develop along these pipelines.

In order to counteract this and to test various pieces of equipment, Telge Energy installed both a booster transformer for the incoming electric supply and insulated flange joints on incoming district heat pipelines at a customer's premises in order to counteract the problem of stray current.

In order to deal with the employees' anxiety regarding the use of mobile and portable office telephones, so-called, Free set telephones, the company has established recommendations for the use and supply of so-called hands-free units to ensure the effect is as limited as possible. (Letter 232)

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Occupational services is a revenue-financed consultancy within AMS, The Swedish Labour Market Board. The assignment is to work with occupation-oriented rehabilitation, and within the framework of that assignment we at "Elrum" come into contact with the need of such rehabilitation for the electro-hypersensitive. The investigative process takes place in a low emission environment.

Our clients, or guests as we prefer to call them, have the chance to test housing and office environments that has gone through EMF-reduction, for at least two weeks, in a building comprised of eight apartments, which in a pure technical sense is separated from the surrounding housing area by a toroid transformer. This guarantees that we get a new start-up of the power mains and that, from the perspective of electricity, maintain a very good electrical environment – with the exception of that which radiates in, which we haven't done so much about.

Those who come to us – about 65 persons so far – have not always been diagnosed as electro-hypersensitive or electro-sensitive, but their problems are considered to be related to the electrical environment: lighting, computers, cellular phones, other electronic or electric apparatus. The majority of our guests, 57 individuals, suffered from manifest disorders and had been on sick leave for extended periods, often many years. The youngest person we worked with was 20-years old, the oldest 63. Women were over-represented among the patients: 45 women, 20 men.

Even in the initial stages of our work we noticed that many of the individuals also suffered from other forms of hypersensitivity and allergic conditions. Of the 45 most recent guests, 19 stated that they had various allergies or hypersensitivity to fur bearing animals, pollen, and various foodstuffs. It is not uncommon for other medical conditions to be involved, such as back problems, problems with pain and, in a few cases, depression.

Very often, in 27 cases, our clients spent long periods of time in environments that can be characterized as harmful. They have worked or lived in mold infected buildings, worked with chemicals or been exposed to insecticides, such as organophosphates.

Approximately the same percentage had been exposed to major psychological stress at work, but above all, in their private lives. The same tendency can be observed in other groups of people on sick leave, so there is nothing particularly special about that.

How do people perceive the experience of spending time with us? It follows a certain pattern. The majority of our guests feel *worse* after arriving at the facility. It affects practically everyone, regardless of where they come from or how long the trip had been. The most common symptoms are concentration and memory disorders, tiredness and a feeling of weakness. It appears as if it becomes accentuated at the beginning of the stay. On the other hand, many relate that they sleep better at the facility right from the very first night. After three or four days, and above all during the second week, practically everyone experiences a dramatic improvement in the state of their health. They feel more alert, can concentrate better, can do more, the pain decreases and they say: "Now I can think clearly".

Each new technical installation is carried out very carefully. The result is inspected with the same type of measurement methods as when we began operations. Sometimes, a small detail can be missed that can lead to the deterioration of the electrical environment, and then it is our guests who notice it. But no blindfold tests are conducted.

Since the vast majority of our guests gradually feel better or much better with us than in other indoor environments, we do not hesitate to draw the conclusion that EMF-reduction of the home and work environments would help improve their chances of returning to professional life. Naturally, we hope that our attitude also has a positive effect on their perception of their stay with us. (Statement 23)

A person who can combine technical know-how with a good financial situation, and who also has the opportunity of making decisions regarding EMF-reduction measures both at home and at work, has a very good chance of creating an environment as free from electricity as possible.

I am a man, 51 years old with a grown-up son, an engineer and section manager in one of our largest consultancy companies, specializing in combustion technology. I am a member of the company management. I have had an average of 1-2 sick days a year during the past couple of decades.

My problems began more or less imperceptibly in 1983-84, when we purchased a central calculation computer for a relatively small consultancy company, of which I was co-owner. This new work tool provided completely new and stimulating possibilities for qualified calculations, word processing and so on. The days were long and the small, probably high-radiation terminal with red lettering was on for 10-12 hours a day, about a half meter from my face, for many years. It started with a feeling of irritation in my face, reminiscent of minor sunburn, that I ignored for quite some time. The symptom disappeared when I was not exposed, but returned with increasing promptness when I used the monitor. I became aware that something was not quite right when visitors asked if I had been on vacation in the sun, even though I had been using the computer for long periods.

Replacing the monitor with encapsulation in a Faraday's cage may have slowed the symptoms' rate of increase, but it didn't make things good. At this time, accounts began to appear in newspapers about people who "imagined" that they were sensitive to computer monitors, and all sorts of so-called experts made statements beyond their areas of expertise. Since I am pragmatic by nature, work with problem-solving and couldn't blame my problems on menopause, I started to gradually eliminate the major sources, which were primarily monitors and fluorescent lamps. At this time, the first stationary LCD monitors for PC showed up, which, with minor difficulty, could be connected to our internal computer network, and were a clear improvement.

After that, I have most often worked with LCD and TFT monitors at my workplaces, which has worked out perfectly. However, I have to ground some of them separately in order to avoid problems. I have replaced all the fluorescent lamps with light bulbs or halogen lamps at home and at work. Everything is grounded. What causes problems are computer monitors, TV screens, fluorescent lamps, electronic transformers [switching power supplies] (the instrument lighting in some new cars).

I can tolerate the new computer monitors that my colleagues have for 5 minutes per day without causing any problems, certain process supervision monitors up to 20 minutes, older-model computer monitors hardly a minute from a few meters away. We have a 33" TV at home, which means that I can sit some distance away and thereby avoid problems. I have no trouble with cellular phones, microwave ovens and radio sets. Ovens, vacuum cleaners and other high effect appliances can cause problems if I had been exposed to something like a high-radiation computer monitor earlier in the day. Longer periods away from electrical appliances result in a greater tolerance for occasional exposure. Longer exposure results in subsequent greater sensitivity towards appliances that don't normally produce problems.

My condition has been unchanged during the past several decades and is still expressed primarily as a feeling of strong sunburn in my face. I have no other symptoms that can be attributed to electro-hypersensitivity with any degree of certainty. I have learned to live with this relatively minor handicap. I get by, if I avoid certain environments and adapt my local environment. At times, however, I have to deliberately put myself in an unsuitable environment, such as during company visits or negotiations with customers, since many people still regard electro-hypersensitivity as psychosomatic. (Letter 332)

Having both the home and workplace made low-emission results in the best prognosis, as the above letter shows. Some more examples:

While I was on sick leave, a number of measures were taken at work and in my home to reduce my proximity to electric sources as far as possible. My workplace and my home went through EMF-reduction.

I was given my own room at work and avoided using a monitor for four years. I gradually got better and two years ago, via the regional social insurance office, acquired a portable computer with a LCD monitor. It has worked well, but if I spend too much time working on it, that can result in a prickly feeling in my face.

Today, I can lead a fairly normal life, but have to be careful and avoid spending extended periods of time in the proximity of electronic appliances (cellular phones, TV sets, traditional monitors etc.). This limits my activities at work as well as privately. I always have to be aware of the things in my surroundings and request that people shut off monitors/TV sets and not to use cellular phones when I'm around.

If I compare my situation with that of many other persons with electro-hypersensitivity, I have been lucky. I had a safety engineer at work who took my problems seriously and made sure my workplace was modified to lower the EMF. At home, my husband made sure the house went through EMF-reduction. My colleagues and my boss have shown a great deal of understanding and respect when I said, "this doesn't work for me".

I am convinced that it was the speedy actions taken at work and at home that made it possible for me to lead a reasonably normal life today. (Letter 401)

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During that time, we reduced the fields of the entire apartment and all the electric cables and lamps were replaced. Even the telephone cable was replaced by one that was shielded and a completely electricity-free telephone was purchased. The TV was fitted with a glass plate with a metal coating, which was grounded. It worked all right from a bit of a distance. The vacuum cleaner was equipped with an eight-meter long hose.

The company helped out with what we mutually considered to be reasonable, considering the five years I had left until retirement. The cables under the floor were shielded, the computer removed and low-energy lamps were replaced by ordinary light bulbs. I had enough professional tasks to deal with – mail and fax orders – which were carried out with the help of computer lists and a "hose telephone". My colleagues on either side of my room moved their computers away from "my" wall. The important thing is always the distance. (Letter 403)

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I can do my job with the help of a specially constructed monitor in which the electronics have been placed in a small box outside of the monitor. The monitor has an enclosure made from wood. It was built by the Bemí Company in Lingham³¹. EMF-reduction was performed in my room; the fluorescent lamps replaced by ordinary light bulbs. I have also been given a re-designed telephone.

We paid for the EMF-reduction of our house ourselves (shielded cables, fluorescent lamps replaced by light bulbs).

I also had the amalgam removed from my teeth, and after it started I could feel how the electro-hypersensitivity began to diminish. (Letter 387)

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I went on sick leave in October '96. Had EMF-reduction performed on the house in November '96. Replaced all the cables with shielded cables. I shielded the lamps with a [metal] net. I have a camping stove. When the washing machine is on, I have to go out. I was not awarded an allowance for home equipment, the application was rejected. I had to borrow the money.

My employer arranged for me to visit the "Ekohuset" at Sätenäs in December '96. It is a building with low levels of EMF with workstations where different [low emission] computers can be tested. I was all right there, I could tolerate those computers.

³¹ The monitor has very low emission, with several layers of metal shielding.

I went back home with increased confidence, now I knew I could work with computers. But the wheels of bureaucracy grind at a very slow pace. I had various meetings with my employer and I was to be examined by the "central evaluation group" at the regional social insurance office. It was their evaluation that I was to work in an adapted environment. My employer reduced the fields of one room, the washroom and the corridor. I get by very well now. But socially it's a bit boring, since I can't go into the other areas at work, I have to stay in my room. (Letter 88)

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I reduced the fields of my home environment, removed the fluorescent lamps. I used electricity as little as possible. I couldn't watch TV. Vacuuming and the oven became a problem. I became isolated from the community. It was impossible to go to the movies, go shopping, pretty much everything. I discovered that I had as little tolerance for fluorescent lamps as I did for computers. Fluorescent lamps are everywhere.

At my work, they naturally thought I would quit. But that was the last thing I wanted to do. After a number of incidents I asked my immediate superiors for a meeting. A small enclosure was built in the stockroom where I could work without a computer. We wanted to see if I could tolerate the general environment without being in close proximity to computers and fluorescent lamps. I had recuperated during my sick leave and now knew that if I could just stay away from computers and fluorescent lamps I would be OK.

I worked that way for a while and it went fine. Then the decision was made to move Customer Service with three people down to the stockroom. Pleasant rooms were built for all of us, and I was placed a bit further away from the computers. I had an environment that I could function in. Via FEB, I found a solution; a military PC and an OH screen that served as a computer monitor. I could go back to working with my assignments. My employer began to understand and I felt I had some support. I had the amalgam removed from my teeth. My condition deteriorated during the "sanitization", which shows how sensitive I was to amalgam.

Years have now passed, today I use a military computer monitor as well; it is so thick that it doesn't emit any radiation whatsoever. I have shielded cables. I realize that I have been lucky, I have had support. (Letter 378)

Transmitters for cellular telephony can occasionally spoil a successful EMF-reduction of the home:

I lived in an apartment up until the summer of 1998 and felt very poorly. Worst of all was when the neighbors kept their appliances, such as the TV or stereo, set on standby [instead of turning them off completely]. I had been searching for another place to live for a while, and in June 1998 bought a small house. Before the purchase went through, careful measurements had been made in the house as well as of the surrounding area.

After the purchase, the municipality assisted me in conducting a very successful EMF-reduction of the house.

Am I satisfied now? No, because despite the EMF-reduction, my living conditions have gradually deteriorated due to the continuous increase in power levels of nearby transmitters. If the government's proposal for the compulsory distribution of the already established mobile telephone operators overcapacity to new operators goes through, the power levels will of course increase drastically and at an enormous rate. Who will see to it that I get help in finding a new place to live, if I can't continue living in my present home? Someone should be responsible for that. (Letter 202)

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I have been on full and half sick leave by turns since 1991, but have only gotten worse. In 1993 I decided that I had to arrange for a good home environment with regard to electric and magnetic fields. I began to look for a lot to build a low emission house on. After a great deal of searching, we found a lot with the proper conditions. Both the low frequency and high frequency fields were low.

Now began an intensive period in which I called all kinds of experts and persons knowledgeable in the field and asked for advice. Afterwards, the house was built with all the EMF-reduction measures then known.

During that period I had been completely unable to work for over a year. After I had lived in the house for a half year, I felt so much better that I could start working half-time at my place of employment. My workroom had been modified to lower the EMF and I had been given a shielded monitor. My workplace still affected me, but because my home environment was so good I recovered everyday.

This worked fine until the spring of 1998. Since then, my condition has increasingly deteriorated. After having measured the levels of the mobile telephone transmitters here in the area, we have been able to ascertain that the power intensities have increased so dramatically that today, they are at the same levels here (outside of town) as they are in a big city environment. The effect of this is that I no longer recuperate in my house. Nowadays I feel so poorly that I can't manage to work at all.

As far as I understand, I have no chance of influencing my electric environment. Even if I find something that works right now, it will soon be covered by some mobile telephone transmitter as they [the operators] continue to expand their cellular networks. (Letter 415)

But attempts at shielding radiation from cellular towers have also been carried out:

I became electro-hypersensitive about five years ago when I got a new computer at work. Since then, I have had problems with monitors, fluorescent lamps, TV sets, DECT telephones, telephones with T-coils, cars, buses etc. For some reason, I wasn't bothered by mobile telephone masts until last autumn, when GSM-1800 was installed here. At the moment, I work out of the house while my room at work is being shielded in an attempt to get protection from the radiation of the GSM mast.

I have never taken sick leave for my condition, since I have had the support of the staff management in correcting things that cause problems. (Letter 288)

In its handbook BAB, BostadsAnpassningsBidrag (Allowance for Home Equipment for the Handicapped), The National Board of Housing, Building and Planning provides guidelines over those who are eligible for the allowance. It recommends rejection despite the fact that The National Board's own investigations show that EMF-reduction is very helpful for the electro-hypersensitive.

During the 1990's I tried to find a mobile cabin to use for temporary emergency housing, such as at night when my body was totally electrically overcharged and I didn't know how I was going to survive. Sometimes I slept in the car in temperatures of up to -15 degrees [centigrade] and sometimes in forest cabins without water or a toilet. But the municipality couldn't even help out with that. The municipality's policy is not to give help to the electro-hypersensitive, with reference to BAB. The case is now up before the social welfare board and I don't know what the result will be. My health in a city apartment gets worse every month, since the use of electricity is constantly increasing. (Letter 69)

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I don't have enough money to carry out EMF-reduction on my own. It doesn't fit into the [social] help system available. If I were confined to a wheelchair, I would be able to have my kitchen adapted for a disabled person. Having the fields of a kitchen lowered by means available from society is not possible today. The authorities are totally unsympathetic. (Letter 131)

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After a few months, my employer helped me with an EMF-reduced room, computer and telephone, so that I could work part-time – I couldn't manage more, since there was so much electromagnetic disturbance from adjacent rooms.

I had to pay for the reduction of the fields of my home on my own. When I asked for help, the municipality where I live claimed that the National Board of Health and Welfare and the National Board of Housing, Building and Planning had forbidden them from providing an allowance for adjustments to the electro-hypersensitive.

I live a better life now than when I first developed electro-hypersensitivity on account of everything I've learned about methods for EMF-reduction, but many problems still remain. For example, I will soon need a hearing aid, but the audiologist at the auditory center told me that most electro-hypersensitive patients can't tolerate the electromagnetic fields from a hearing aid. (Letter 210)

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Electro-hypersensitivity is a functional impairment and those afflicted should be granted an allowance for home equipment for the handicapped. The National Board of Housing, Building and Planning has investigated the impact EMF-reduction has on the situation for those with electro-hypersensitivity. The results have been positive. In 1994 we had our house EMF-reduced, and we had to pay the costs for electric material and labor ourselves. Thanks to the field reduction at home I am able to gather the strength to be able to work and lead a relatively normal life. I have had to and still have to adjust my life situation in accordance to my handicap. (Letter 48)

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I feel pretty good at home now. I was lucky enough to both have the financial wherewithal necessary to perform an EMF-reduction of my home on my own as well as to have a husband with technical expertise. But what about those who are not as fortunate? Is it truly reasonable that people can be denied an allowance for home equipment for electro-hypersensitivity? Regardless of the causes of the symptoms, they are real and cause severe illness. According to my own experience as well as that of others, an electricity-free environment is the only thing that leads to a decrease of symptoms and lets the body function as it should. An extended period of time in a good electric environment, preferably in combination with a large intake of antioxidants, a fair amount of exercise, a good night's sleep and proper food (all in order to build up the immune defense system), helps one to gradually become less sensitive to electromagnetic fields. Shouldn't it be the right of every individual to be able to live and feel well with his or her family in their own home? (Letter 352)

Despite the position of The National Board of Housing, Building and Planning, there are still municipalities that grant an allowance for home equipment to the electro-hypersensitive to be used for EMF-reduction:

In 1994 I moved to my present municipality, and here I had the fields of my home reduced with the help of the municipal Town-Building office. At this point, I had been requesting an EMF-reduction of this nature ever since 1989, but had been turned down by two other municipalities.

It is important for those of us with electro-hypersensitivity to have access to housing in which we can live and workplaces in which we can work. It is also important for field reduction not to be delayed, but instead be carried out as soon as possible after electro-hypersensitivity has been ascertained. (Letter 21)

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We were lucky enough to live in a municipality with a municipal code that made it possible for us to receive an allowance for the expensive EMF-reduction of the house. "The municipality feels that this is a group faced with difficulties and we have to do something for them, even if it goes against the praxis of the National Board of Housing, Building and Planning." (Letter 405)

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Today, I can live an almost normal life with regard to electro-hypersensitivity as long as I stay at home (detached house). This is because we were able to carry out EMF-reduction with the help of a municipal/national allowance for home equipment for the handicapped.

Outside of the house, it is very difficult – I can't remain in public buildings other than for short periods of time. When visiting, I have to ask that fuses in the fuse box be unscrewed. I can't watch TV, etc. (Letter 159)

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It was actually Stockholm's municipality that showed the greatest respect and acknowledgement, who helped us economically with the EMF-reduction of our home, along with a few guys at the power plant who helped us with a five-wire cable on the street where we live. (Statement 16)

EMF-reduction of homes can also be a good deal for the municipalities:

In the winter of 1991, the municipality granted me an allowance for home equipment so that I could perform EMF-reduction of my row house. At that time, I had lived in darkness for a couple of years, with most of the fuses in the house unscrewed. I had also taken a leave of absence from my teaching position to conduct postgraduate research studies during that period and was able to study at home in what was for me a healthy environment.

In 1991, it was time for me to return to my teaching duties, and the school conducted a fairly extensive EMF-reduction program. All the fluorescent lamps were removed in one classroom and replaced by fixtures with light bulbs, the big slide projector and tape recorder were fitted with shielded cables, a small workroom was prepared for me, and the fluorescent lamps were shielded in one corridor and in my department. I was also given help with the EMF-reduction of my car.

Everything worked well. I was able to work fulltime and pay taxes, so that my local municipality was more than compensated for the expenses involved in the EMF-reduction of my house. And over the years I became increasingly less electro-hypersensitive. I was soon able to live a completely normal life: visit friends, go to movies, concerts, the theater, restaurants; go to the post office, do the shopping and so on. But I was careful to avoid computers as far as possible. (Letter 108)

Not even the government feels that the electro-hypersensitive should have the right to an allowance for home equipment for the handicapped.

I did not receive an allowance for home equipment to lower the EMF of my home, so I appealed all the way up to the Supreme Administrative Court, but was not granted a review permit. Unfortunately, municipalities and regional social insurance offices treat us differently depending upon where we live in the country, even though they all have the same code to go by.

To make a long story short, I finally received help with the EMF-reduction of my home after we had lived with candles for about a year. In addition, my employer reduced the fields of my workplace.

At present, I work fulltime and feel that I function fairly well; I can even go into stores for brief periods. There is a lot that I avoid, but I count my blessings anyway – there are those a lot worse off. I feel healthy as long as I avoid electric and magnetic fields. (Letter 1)

Alongside of EMF-reduction, the removal of amalgam and/or other metals from the mouth is characterized as having a positive effect on health:

In the summer of 1988, I found out that there was a dentist in Norway, Bjørn Oppedal, who removed amalgam using major safety precautions, and he became my lifeline. I had also learned by then how to live with as little electricity as possible, and in just a few months I became much healthier. (Letter 108)

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A doctor advised me to have my numerous amalgam fillings removed. I had this procedure done over the course of two years with a dentist who specialized in the removal of amalgam. This led to an improvement. I could watch more TV, use an electric typewriter to make clean copies of texts and so on. (Letter 157)

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At pretty much the same point in time, I finished a amalgam removal of my teeth that had gone on for quite a while. I had amalgam, gold crowns and titanium crowns in my mouth. All the metal-based fillings were removed and replaced by a composite/porcelain. I felt increasingly better but was still electro-hypersensitive until the following "program" was completed: The exchange of dental filling products. Metal-free cement, filling material of composite + porcelain. The removal of a metal post, which was replaced by a carbon post. The dentist carried out the substitution of dental material in association with the Amalgam Unit at the Akademiska hospital³².

³² A specialist amalgam unit in the city of Uppsala, later closed for political reasons.

Taking magnesium and calcium. Had a very beneficial effect on my "galloping heartbeat". Exposure to selenium, which I took in connection with the removal of the amalgam. The selenium was inappropriate for me; it is after all a metal that conducts electricity. The installation of insulating material around the district-heating pipeline at home. Besides this, there were no further measures that I had to take. I am now completely free from my electro-hypersensitivity. (Letter 24)

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After various health measures of a preventive nature – including being in an environment practically free from electricity and the replacement of amalgam and crowns in my mouth with plastic materials – I was freed from the most handicapping health effects. But due to the evermore-extensive mobile telephone network and the increase of other electricity-based [wireless] communication, it is becoming increasingly more difficult to find beneficial environments for rehabilitation. (Letter 251)

Many describe a remission of their symptoms when they received an injection of B12 together with EMF-reduction and the "sanitization" of their teeth. In addition, alternative treatments are described as having good effects.

During the period described, I tested all medical and non-medical measures imaginable. Acupuncture, shiatsu, a vegetarian diet. At the beginning I took a lot of antioxidants and high doses of selenium, as well as injections of vitamin B12. I tried doing without these for a while, but felt that my condition worsened. The best effects were achieved by the removal of amalgam and the EMF-reduction of my home. (Letter 63)

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Recovery from this took a long time. I avoided all electricity. I got well after the removal of amalgam and intensive B12 therapy.

Today, I can watch TV if I sit far enough away. I can endure certain fluorescent lamps but react to others. I tolerate regular electricity. Cellular phones are out of the question. (Letter 192)

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I started first with the removal of amalgam and gold crowns, which were replaced by porcelain. I had 18 acupuncture treatments. This meant that I was now free from the terrible migraines that I had suffered from for so many years. Measuring was conducted at work, and I was now given our break-room as my workroom. It was located in a different part of the building, and I was there for about a year. After that, the company got a hold of a neat shed with low electric and magnetic fields that I still use today. It should be mentioned that my assignments are, as a rule, long term, so I was able to adjust my time as I saw fit, as long as I put in my hours.

During that time I also came into contact with a biopathologist and was treated with large doses of vitamins and minerals that I still take, although now in normal doses. Furthermore, I got into contact with a doctor who treated patients suffering from fibromyalgi with B12. I started my treatment with injections of B12 once a week during the first year, and then once a month. It helped me get back my memory and control over my situation. I also found a zone therapist and received eighty or so treatments, once a week at the beginning and later once a month. Last but not least, I have taken long walks during the past five years, at least 7 km four-five times a week.

This is just a small portion of what I have gone through during all these years, but at last I gained control over my situation, I was open-minded and read about those who had gone through it before me; it is them I have to thank for my second life. (Letter 67)

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In 1984 we moved to Hälsingland. Some of my problems improved but I still felt pretty bad. In 1991 I made a trip to the Institut Santa Monica in Poland, an alternative medicine hospital run under Swedish-Polish-American management. I had my amalgam removed there at the same time as I underwent a cleansing treatment and intensive treatment with vitamins and minerals. I have been to Santa Monica several times after that and have felt better after the treatments. I have worked half-time since 1986 as well as having a partial disability pension. (Letter 284)

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At the present time I am undergoing rehabilitation with acupuncture and shiatsu, which has been an enormous help. In addition, I wear a protective suit under my regular clothes. I also take antioxidants in mega doses. The vitamins cost SEK 1,500 a month. All this has actually made me feel so good that I have begun a course of study at the university, and they have also done a bit of EMF-reduction so that I can get by tolerably well there. For example, fluorescent lamps were replaced by regular light bulbs, LCD monitors (BEMI and MultiQ) were purchased, which I am very thankful for. (Letter 162)

Some medicines for other illnesses can have unexpectedly positive effects on electro-hypersensitivity as well:

One of my patients with severe electro-hypersensitivity has a daughter who began studies at the university and had problems with rooms that had fluorescent lamps and computers. She suffered from skin disorders, a feeling of pressure in her head and so forth. There are those suffering from vitiligo, i.e. not enough skin pigment, in her family line and their dermatologist usually prescribes a so-called PABA lotion, which contains paraamino benzoic acid, also called vitamin B10. It protects them so that they can be out in daylight and sunlight, even though they don't have much pigment. My patient wondered if I would consider giving her daughter a prescription for PABA lotion to see if it might help her, and I did so.

She puts on the lotion once a day and doesn't suffer from either skin disorders or a feeling of pressure in her head etc. when she is in the group-room with the computers and fluorescent lamps.

I have started prescribing it for other patients as well. I don't think it helps those who already suffer from electro-hypersensitivity, but it could be of interest for those who are starting to have problems with redness of the face when working with a monitor.

My electro-hypersensitive patient and I told ourselves that there are those who say that this only covers up the symptoms and that the electricity goes directly in anyway. On the other hand, skin is our barrier. Of course this does call for a prescription, but if you have a good doctor, it can be worth trying. (Statement 30)

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After a few months I began EMF-reduction, but it didn't seem to be of much help. A company by the name of Sunflex came and helped me with the EMF-reduction. But when I was given Levaxin, which is a medicine used for treating goiter, I felt a noticeable difference. I don't know if it was on a psychological level or not, but in any case I felt a real sense of relief and could suddenly start to live normally again without having to think about it everyday. (Statement 21)

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I was diagnosed with breast cancer in 1995. I developed a radiation injury along with erysipelas. My immune defense system was completely wiped out. That's when I was given Iscador and Thymogen in order to deal with the erysipelas and to strengthen my immune defense system. My electro-hypersensitivity disappeared! I was almost symptom-free until 1997, when I took another course of treatment.

I was given physiotherapy for pain in my shoulders and back, but it didn't help with the neuralgia – but this was alleviated by the Iscador shots that also allow me tolerate a "normal electric environment". I tolerate a "gentle" electric environment fairly well today, but thyristor-controlled dimmers and frequency controlled pump and fan systems result in severe symptoms. They produce delayed reactions, i.e. the problems don't become apparent until a day or more later.

My condition didn't improve during the first period of my sick leave, either. But during Easter, when my neighbor turned his two DECT telephones off, I could start thinking again after about 45 minutes. When DECT telephones affect me, I can't concentrate, I can't think a thought all the way through; my thoughts flutter off like butterflies so that I have to start over again, if I can even remember what it was I was supposed to do in the first place. But B12 shots, magnesium and Efalex, a type of essential fatty acid given to children with DAMP, help.

Without the DECT telephones, my memory is slowly improving. B12 shots help with the cramps if I don't stay in a poor electric environment too long. Since I started being affected by DECT telephones, my ability to deal with stress has been very low. (Letter 283)

Electro-Refugees

There is no place today that is free from mobile radiation. This means that those of us suffering from acute electro-hypersensitivity can't find housing and are forced to live in some isolated cabin (if we can find one) or move around in trailers that can be parked behind some mountain until a base station is erected and we have to find a new temporary haven (if there is one). (Letter 150)

In this chapter, we encounter people who were forced to flee from their homes because they were no longer able to tolerate the electromagnetic radiation. Even if they were able to deal with the fields in their own homes by means of EMF-reduction or unscrewing fuses, problems can have resulted from such things as the various electric appliances of the neighbors, cordless telephones and cellular phones or, the hardest to deal with, base stations for mobile telephony. Occasionally, a more or less temporary solution can be to live in a trailer:

I live with my husband in an apartment complex and feel bad all the time. I can feel the neighbor's TV and other electric appliances. Even a transistor radio at a distance of 3-4 meters causes problems, as do cellular phones. Over the course of time, I have become hypersensitive to smells, chemicals and certain foodstuffs. I live in a trailer during the summers, from May until September. (Letter 243)

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The result of this is that I, like so many others, chose to flee to an electricity-free environment. I lived in a trailer in the countryside for three months, and then in a leisure boat during the summer. After that, I was able to live in my regular row house with all the electricity shut off.

In January of 1998, the newly built, low EMF house in the countryside was finished. It has worked out well, but is otherwise limiting in a social context. (Letter 155)

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I was afflicted in the autumn of 1991; at about Christmastime of the same year it became acute and I couldn't keep living in my apartment and had to move out into nature. I have been living in a trailer all year round since the autumn of 1992. It isn't fun, but it is one way to survive. (Letter 357)

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At the end of March 1999, Telia Mobile brought a base station located about 300 meters from our house into operation. The municipality lost track of our appeal and our petition for an inhibition, and we were able to establish that EMF-reduction is of no help when it comes to a base station. The symptoms were the normal ones for a high concentration of electricity: burning pains in my teeth and cheeks, a great deal of facial color, concentration difficulties (trouble finding words), and after a few days of exposure my heart beat increased dramatically, with a resting pulse of about 110. At that point we moved out into the forest for three months to live in a trailer until we found a temporary home.

It is worth noting that no one raised a finger to help us. Afterwards, we could verify that the mast became operational on the same day my wife began to feel poorly at home. What is ironic in this context is that the very same evening, we met with the municipal administrator, who was also the municipal architect and the person who made the decision concerning the building permit, to provide him with information about electro-hypersensitivity. The mast is still in place and we have been deprived of our home. (Letter 249)

*

I lived in a trailer in the forest during the period after my illness broke out, totally without electricity for about a year. Afterwards, my surroundings and home were prepared to reduce the fields. Despite the EMF-reduction of our house, I still didn't feel well in that environment. The affect of the road traffic about 25 meters from the house, the neighbors about ten meters from my house as well as the overhead lines for electricity and telephony in the area were all reasons why we had to build a new house on the outskirts of town. The house was built using a 5-wire system. The boiler, power mains, central vacuum cleaner and freezer are located in a separate building, 18 meters from the house. The distance to the neighbors' is 150 meters.

What will happen if a cellular tower is built close by? Will I then be forced to move yet again? Where is a free zone for those of us who are electro-hypersensitive? (Letter 398)

*

Since I wasn't able to live at home, I managed to borrow a summer cottage where I could switch off the electricity outside of the cottage. In November, the temperature was +8 degrees centigrade in the mornings. I then moved into a trailer, in which there was frost on the floor during the winter. My husband tried to lower the exposure in a room in our house but failed due to the close proximity of a power line.

I had requested an allowance for home equipment from the municipality but was turned down. During the fall, I borrowed some money from an acquaintance, so we were able to buy a summer cottage without a toilet, shower or drinkable water.

Thanks to my husband, who understood the problem and persistently tried to create an electric environment that I could tolerate, I have survived and I no longer get quite as sick anymore when I am subjected to electric and magnetic fields. For the past two years, we have been living in a house in which all the electricity I come into contact with is shielded. I am quite well when I am at home. My big problem now is that some of the cellular phones make me very sick.

It is important that zones and houses are set up where the electro-hypersensitive can live until they can prepare their housing in an environmentally-friendly manner and not become electro-refugees in Sweden for four years, like I was. (Letter 325)

Other electro-hypersensitive individuals move around before they find a place where they can recover:

I performed EMF-reduction of my whole house in 1993; I felt good at home. But my entire social situation became impossible; I couldn't be in stores, visit friends or be a part of a group, since almost everyone has a cellular phone, which makes me very ill.

Then even my home environment deteriorated at certain times, and very high levels were measured both inside and outside the house. I had supplementary EMF-reduction of the house done, which cost a great deal, but since these fields were airborne, they couldn't be screened off.

Today, I can't be at home at certain times because of this without getting very sick. So where am I supposed to go? Run around from place to place to keep from getting too sick? There will soon be nowhere my body can recuperate, and in that case, how long will my body be able to keep on going? The situation is very oppressive. (Letter 82)

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At the moment, my husband and I live in a rented cottage consisting of one room and kitchen without electricity, water or telephone, 1 1/2 km from the nearest neighbor. It's the sixth time we are living out of a suitcase. We have previously rented diverse cottages that weren't insulated for winter use, and lived in a trailer for five months at wintertime. We almost froze to death in them, since I couldn't tolerate it when the circulating pump to the heater was on at the same time I was indoors. Temperatures of +6° centigrade were not uncommon, if we weren't up all night keeping the stove burning.

After work, my husband goes to our house 25 km from here to do the laundry, shower, pick up the mail and buy everything. He chops wood here at the cottage so that I can keep warm. (Letter 31)

*

Do you think that within a period of a few years I would agree to moving four times, losing all of our life's savings - the savings that others of our age see as security for when they get older - if I wasn't convinced of what it is my wife suffers from? I don't need any scientific proof. She is proof enough.

Due to all the moves and other extra costs since 1993, when my wife was afflicted with electro-hypersensitivity, we have lost about one and a half million Swedish Crowns. You probably understand that that is not something one just gives away. We once had the dream of moving to France when we got older. That money would have been the key to realizing that dream. (Statement 16)

There are those who move to an old cabin without electricity or to a summer cottage where they shut off the electricity or performed EMF-reduction:

I also had to sell my apartment, which I had just renovated, and move out to the countryside to my summer cottage, which was not insulated for winter use. I had completely new electric wiring put in (shielded), fixed it up so it could be used during winter, connected water and bought a wood-burning stove. (Letter 269)

*

After a few years and a lot of problems with sleeping, I found that the best place to sleep was the dining alcove in the kitchen. After a while, that didn't work either, so we looked for an electricity-free house close by, which was hard to find. We were able to rent an old, drafty, outdated but electricity-free cabin ninety kilometers from here. The closest neighbor lives 1,5 km away and there are no power lines in the vicinity.

At the beginning I only stayed one or two weeks at a time, after which homesickness and loneliness got to be too much. But 3 1/2 years ago, when I couldn't find anywhere in the house that didn't cause tension in my body and a splitting headache, I fled out to the cabin. It was like an oasis, and I still think that way. I was finally able to begin recovering here. (Letter 177)

*

We have now sold our house and moved out to the cottage. We have performed EMF-reduction using Wasa flex-cable [shielded cable] and use wood for heating. The power company helped us by laying an underground cable to the house. We have had to create a tolerable existence on our own. (Letter 80)

*

I have been living in a little summer cottage for the past nine years, the electricity shut off and no current in the house. A wood-burning stove is used for heating. Candles are used to be able to see in my dark house. My vision has become impaired. I have a gas refrigerator and an oven in an outhouse. (Letter 122)

*

At that point, I was in such bad shape that I moved out to our cottage in the forest, even though it was the middle of winter. We had bought the cottage from my father the year before. Consequently, we decided to leave our beautiful house, which we have been renovating over the past ten years, when we could afford to do so. The house was finally exactly the way we wanted it. (Letter 268)

*

While I was on sick leave, I had the good fortune of being able to borrow a place to live in the vicinity of my family. The apartment was small and there weren't many neighboring apartments close by, and it had a gas stove. I felt very poorly in our regular home and after having the electric and magnetic fields measured, it was clear that the values were quite high.

In 1996, I applied for and was granted medical priority for better-adapted housing. However, it took a long time to find a suitable apartment, since there is not a great deal to choose from when the requirements include things like the apartment having to have a minimal number of neighboring apartments (in a corner at the top of a building), no elevator, gas oven and the nearby surroundings free from power lines, transformer stations, towers for mobile telephony and so on. During 1997, I received two offers, neither of which, unfortunately, met the requirements.

I kept on living in the borrowed apartment during this period, and I suffered from annoying symptoms the entire time. After a while, I turned off the electricity to the apartment via the main fuse switch. In order to recuperate during the summer of 1996, I rented a summer cottage via a friend. I switched off all incoming electricity to the house and used a butane oven and a butane refrigerator.

The outdoor environment wasn't all that good (airborne power lines, telephone lines and so on), but I still felt a marked improvement as opposed to staying in the apartment in town. Unfortunately, the summer cottage wasn't insulated for winter use, so in October I moved back into town. During the autumn and winter of 1996 my condition deteriorated again, and I began to realize that I had to find more permanent, electricity-free housing in order for the improvement to be of a lasting nature. During the winter of 97-98, I got hold of a cabin in the province of Uppland through an acquaintance. The cabin was run-down and with no modern conveniences. I moved there in the spring of 1998. The house did not have electricity and was quite isolated. It was heated by burning wood in the ceramic tile stove, and during the winter only one room of eight-nine square meters could be used.

In the autumn of 1998, the apartment I had been borrowing was to be sold. I got hold of an apartment with an electric stove. I accepted this because the other conditions were OK. I moved in and replaced the electric stove with a butane stove. I also shut off all the electricity here as well. I tried living there for a few days, but unfortunately it didn't work out as I had hoped. Since then, I have mainly lived in the cabin.

In 1998, my husband and I were divorced, and for practical reasons (school, friends and the like) our daughter stayed with him. I try to see her as often as possible. I come in to my apartment in town once or twice a month, and she sometimes comes out to the cabin during vacations and longer holidays. The situation is not an easy one, since she is at a sensitive age and I am not always available when she needs me. We do, however, have daily telephone contact. I have a shielded telephone in a separate building, far away from the cabin. (Letter 406)

In apartment buildings or in small houses situated close to each other, electro-hypersensitive persons have problems with the neighbors' electric appliances, and in particular if the neighbors have cordless telephones or cellular phones:

In January 1999, I had to move out of my apartment and into a summer cottage. This was because I could no longer tolerate my neighbor's electric appliances, including the TV. (Letter 383)

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I could feel when my neighbors turned their TV on or used a computer, and could tell when they were using their cellular phones. I could sit in the opposite end of the row house and tell when the streetlights were turned on. Finally, there was only one square meter in the apartment where I could be without things starting to rock. I was then forced to accept the fact that I couldn't stay there, that I had to find someplace without electricity.

It wasn't easy to find. I had to act as my own guinea pig and test my way along. At times there was nothing obvious to affect me, but my fiance's investigations proved that the things I felt at the various locations were not amiss. Buried power lines, new types of wells that were connected to electricity, or a transmitter mast in the vicinity that I couldn't see, but could feel.

After 2000 kilometers of searching we found a cottage deep in the forest. After moving all the electricity out into a shed, I can now stay there. We do, however, have to shut off the current at night, because the shed is much too close to the house, but we didn't realize that at first. (Letter 252)

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Right now we are adding a bedroom made from reinforced concrete that I also intend to cover with sheet metal on the outside, but this is not a real solution to our problem. Instead, what we and many others we know need is a free zone. After all, should the environment here suddenly deteriorate I would probably be stuck in the shelter, a prison of 12 m². However, in a free zone it should be possible to feel secure and look to the future rather than constantly being aware that tomorrow I may have to run away, which I have already been forced to do once.

This not only affects me, but the rest of my family as well. For example, we can't spend time at our summer cottage because of our neighbor's cellular phone and cordless telephone. (Letter 62)

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I was unfortunate in that after a number of years I realized that we couldn't remain in our house, since I had become a lot more electro-hypersensitive after more and more of our neighbors bought cordless telephones and cellular phones. (Letter 405)

The hardest thing to get away from is base-stations for mobile telephony. Many of those who have performed EMF-reduction of their homes, cannot remain if a mobile transmitter is set up close by. Many people move around to avoid the microwaves:

We had a modern house that had had EMF-reduction performed in the community, but a mobile telephone mast was erected about 600 meters from the house. We had no choice but to move and sell our lovely home. Today we live in a house built in the 30's, out in a small town. I get by fairly well here, with the exception of the worst of the vacation period, when there are way too many cellular phones. (Letter 367)

*

We invested SEK 30,000 in EMF-reduction, but couldn't do anything about the outside influences. A major industrial company consumed more electricity than the rest of the municipality. It was situated about a kilometer away from us. Two GSM masts were close by, as were some railroad tracks. We had to sell and move. We now live at another location with no electricity in the house. The washing machine, refrigerator and boiler room are in the garage. (Letter 302)

*

Today, the environment has deteriorated for those of us with electro-hypersensitivity, primarily because of the increasing use of cellular phones. Transmitters for mobile telephony will soon be everywhere; on buildings and roofs in densely built-up areas, on masts in forests and in the countryside, so that nature is full of microwave radiation. There are people with cellular phones stuck to their ears or in their pockets in stores, in public places, on the streets and sidewalks, so that you are surrounded by permanent and mobile radiation heaters. This makes life a real misery for those of us with electro-hypersensitivity.

I have moved quite often in recent years to try to get away from the problems, but I am still searching for someplace where there is an electricity-free environment without necessarily being a pure wilderness with no infrastructure. (Letter 407)

*

I have moved quite often since becoming electro-hypersensitive. In my last apartment, the electric system was renovated and enlarged, and fluorescent lamps were installed. I couldn't live there after that. In May I moved to a new apartment, which felt all right until sometime last fall. Now I don't feel well there either, probably because of a new cellular tower that was erected close by. I feel really bad when I leave my apartment. It has become impossible for me to be in the area surrounding the GSM mast. I can no longer take walks. For the first time in four years I was forced to take sick leave.

While I am on sick leave I live in a small shack with two rooms and access to a toilet, about thirty kilometers outside of town. I use electricity to heat the cabin when I'm not there, otherwise I have butane heating. I even cook my food on a butane stove. I will move away from the masts as soon as I can, if it's possible. (Letter 266)

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I had to stop working and we moved out to the summer cottage, which we had spent a great deal of money on to build and equip with a ceramic tiled stove, wood-burning stove and butane oven. We lived there without electricity for three years.

At this point I noticed that car alarms, regular cellular phones and even base stations for mobile telephony made me feel sick. The closest mobile telephone mast needed to be almost ten kilometers away for me to be able to sleep at night. Despite our protests, an 85-meter mast was built two kilometers from our cottage.

We were now forced to move a second time and bought a house that as yet still does not have mobile telephone mast for a neighbor. We heat the house through self-circulation, but the pipes are very narrow, which means that I have to sweep out the chimney everyday. This is because I can't tolerate the circulation pump.

If a mobile telephone mast were to be erected here I don't plan on running away again, since it serves no purpose and I'm running out of energy. If I don't manage to get better I'll just have to take the consequences of society's attitude towards us. As one of my acquaintances once put it: The way to solve the problem with illnesses that scientists don't understand is quite simply to see to it that the patients disappear. (Letter 33)

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Our luck held out for four months. Then we got a GSM mast and AXE. The list of my symptoms takes up the whole side of an A4 page. 20 months of chaos then followed. Granted that fair-minded doctors placed me on sick leave for my electro-hypersensitivity, but that didn't help me at home. Together with our youngest daughter, I commuted between our home and a summer cottage.

In the summer of 1996, we bought another house and moved in once again. We conducted extensive EMF-reduction, and I also had the amalgam removed from my mouth and felt better and better. But I still received a disability allowance for my electro-hypersensitivity, since I couldn't be anywhere other than in my own home.

Until now. My municipality has decided to become the most Internet-intensive municipality in the world, they are expanding the district heating system without separating the galvanic insulation from the main section of houses, new masts for telephony and wireless data communication are erected one after the other. This massive radiation has once again knocked the feet out from under my family and myself. A week ago, I once again got to experience how dizziness and cramps, difficulty in breathing and heart palpitations caused my body to collapse. My boy friend had to make an emergency trip to take me to my mother's, who only lives fifty kilometers away from us. She also lives in a low-emission house with much better conditions than ours.

So, I once again wound up packing my suitcases, commuting back and forth between my mother's and my own home. I should really move again, but I'm not sure if my boy friend has the energy to start over again. I may have to leave my family for good this time. (Letter 304)

*

In the beginning of November we received a rejection from the Environment and Health Protection Board. We now realize that no one dares deal with these issues, so by means of a car, my body and a pendulum, we located seventeen base stations within the town borders. We drew a radius of one kilometer around them and found a few smaller areas that I might be able to live in and then began to look for houses.

After Christmas I couldn't manage to go back to work. The doctor at the Municipal Health Service said that he has to believe me but that he can't place me on sick leave for electro-hypersensitivity; instead he put down burned-out as the diagnosis. During the spring and summer I spent a lot of time out in the forest and in my Faraday cage. I couldn't spend time in my own backyard.

In May we finally found a house in one of the smaller areas where I thought I might be OK, and were able to move in at the beginning of August. There were a lot of people who thought that it would be hard for me to move out of the house I had lived in for 32 years, but I had already shed those tears in the forest during the spring. It may have been harder for my husband, who had built the house himself and took perfect care of it, to start working on a house that was in worse condition, but there was no other alternative. For me, in any case, it was the beginning of a new life.

It has cost us a lot of money, sorrow and difficulties, not the least of which because of the lack of understanding we were met with from the various authorities. But I am an optimist and believe that I will regain my health, even if my doctor doesn't believe it is possible, what with all the electro-smog all around us. (Letter 377)

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After those so-called provocation studies conducted by the company doctor, even though they were done for a good purpose, our home environment also became unbearable (the tests probably overstrained me), and we had to move to a detached house, where there was also a bit of distance to the neighbor's ever-increasing electricity consumption. In this way we found an environment we could control, at least at home.

Then came the cellular phone explosion, and living there became impossible. For the past five years I have been living in a fairly isolated fashion in the countryside up in the Northern Sweden, in a controlled electric environment. The children, who have now formed their own families, still live in the old house, and I now have six grandchildren. I would like nothing more than to go and visit them, but it is an impossibility due to the intense electric environment that now prevails in the cities, and primarily all the cellular phones, which in my case is the worst torment imaginable. (Letter 257)

Sometimes, those who have been stricken with the severest form of electro-hypersensitivity have to take drastic measures: wear protective clothing or leave the country.

We who are writing this are a mast refugee family, all of whom have been severely afflicted by radiation from a mobile base station. After moving, the mother and children have recovered almost completely and the symptoms only recur in connection with prolonged exposure to masts or cellular phones. The son cannot watch TV or use a computer since it makes him feel sick. Nor can he spend extended periods of time in an urban environment or with friends. He is 9-years old and has a tough life ahead of him as electro-hypersensitive. The father received a severe radiation injury due to frequent use of cellular phones. And when he was in the apartment with a base station transmitter outside of the bedroom window, he developed total electro-hypersensitivity, and today he can only be outdoors for short periods wearing a specially-made protective suit, the rest of the time he spends in a protective room with candles as the only form of illumination. (Letter 327)

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For the past few days I have been sleeping in the car beneath a large rock on a beach in Spain. I do so to avoid such symptoms as pressure over my chest, cramps, difficulties thinking, abnormal tiredness and sleep disorders. When subjected to extended exposure to microwaves, there is blood in my nose and throat. In certain instances, a feeling of paralysis in my legs and difficulties walking.

My situation changed when I began reacting to a mast that was erected about 400 meters from my home, a transmitter for GSM's mobile telephone system.

This forced me to leave both my home and my job. Afterwards, I searched all over Sweden for another place to live, but was obliged to leave them as the expansion of the mobile telephone system caught up with me. I finally took to living and sleeping in a car.

I spent the winter in Spain, which I am now doing for the second year. This year, however, I have had to live in a car in order to find new locations. The expansion of mobile telephony is going very quickly here as well.

When I am able to find a "clean" spot, I am practically healthy, even though I am affected fairly badly when I can't get away. My body and psyche can't take an unlimited amount of damage. Microwaves are not a natural part of our environment.

I think I should have the right to live in Sweden - don't I? (Letter 221)

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During my period of training in Engineering Physics in the spring of 1993, I was afflicted with severe vomiting, pus-filled boils in my face and torso, severe weight loss and extreme tiredness after a programming course. I thought I had been infected by a bacteria or a virus. However, my body had a hard time recuperating, and new unpleasant problems arose: menstrual disorders and bleeding between periods. After about eight days of profuse menstruation, the bleeding would stop for a few days and then start up again. Sometimes two months might go between periods, and sometimes a small amount of bleeding might continue for an entire month. In addition, I suffered from severe menstrual pain. My menstruation had previously been painless and regular.

I was abnormally thirsty. I could drink six liters of water a day but still feel constantly thirsty. I had headaches. Difficulties with concentration. Susceptible to infection (I came down with everything from sinusitis to vaginitis in a never-ending cycle). The accumulation of fluids. Increase of resting pulse (from about 65 BPM when I was healthy to about 95 BPM). Loss of hair (I was finally forced to wear a full wig). Dizziness, problems with balance and a paralyzing tiredness. I wasn't able to make a short shopping trip to the store for food without having to sit on the floor to rest several times before being able to collect a few basic staples. The dizziness and part of the tiredness was often alleviated when I was outdoors.

Since my boy friend and I love appliances, we had a computer, printer, cellular phone etc. at home, and computers were constantly on at the college. It wasn't very often that I was indoors in a room that wasn't crammed full of laboratory equipment filled with electronic parts, operating computers or both. Outdoors, I became dizzy and weak when I was on a street in a city environment or close to mobile telephone base stations, steel mills and the like, but I felt better in a forest and other places with relatively little electro-smog.

My boyfriend and I tried to adjust by cleaning up the jungle of cables, buying a LCD monitor (I could tolerate it at first), tossing out the TV and cell phone etc. I continued my studies and as far as possible tried to avoid exposing myself to functioning cathode ray monitors and cellular phones etc. However, I still suffered badly from the problems mentioned above, even if the dizziness, nausea and the most paralyzing tiredness were alleviated somewhat due to the attempt to minimize exposure to EM fields. As my old grandmother used to say, you can get used to anything, even an icicle up your butt if you have to. I reconciled myself somewhat to my reduced capacity, the wig, never watching TV and so on, but when my boyfriend and I heard from a number of different sources that electro-hypersensitivity is often connected to amalgam and that the array of my symptoms indicated that my amalgam fillings contributed to the problem, I decided to have them removed. To make a long story short, the amalgam removal resulted in catastrophe, since the fillings were removed much too quickly and to a certain extent incorrectly.

All of a sudden I couldn't be in our apartment, even with the main fuse turned off. In a wintry-cold Sweden of 1997, I had to flee out into the forest and sleep in an unheated trailer, while at the same time I was afflicted with symptoms of paralysis in my arms and legs, problems with breathing, vomiting, unable to go to the toilet without help etc. Since I was afraid that I the hardships would kill me and came close having my fingers and toes frostbitten, my boyfriend and I were forced to take the risk that I might not be able to take an airline flight and fled out of the country.

We found an isolated place in radio shadow on one of the Canary Islands and lived there in an old car. We rented an apartment where we could store our medicine, food and beverages in a refrigerator, passports, money, clothes etc., since a car parked in such an isolated location attracted gangs. My boyfriend bicycled non-stop between me and the apartment to prepare food and bring drinks and medicine. I was constantly afraid that a gang would show up when I was alone. The local inhabitants couldn't understand how I dared be alone in such a dangerous place, but I didn't have any choice. At night, when we slept in the car out of earshot from civilization, I resumed my childhood habit of saying my bedtime prayers. By good fortune we were never robbed.

In this situation it was little comfort that the acute total collapse of all my bodily functions and the extreme hypersensitivity towards EM fields, caused by the removal of the amalgam, indicated that the original electro-hypersensitivity was amalgam-related. Knowing the cause of a problem is certainly desirable, but I had thought that the problem would disappear once the amalgam was gone. Now I know better. Many of those in the same situation as me got there in the same way I did. The amalgam must be removed if it causes as much suffering as it did in my case, but the dentist must be specially trained so that the patient doesn't fall out of the frying pan and into the fire because of the metals released during the removal.

Once you find yourself in this horrible situation, what causes the most problems by far is the poorly planned and extremely reckless expansion of wireless communication. In order to cater to short-term economic interests, the entire country is covered in radiation that exposes the general population to great risks, with a major catastrophe looming in the distance. Companies won't pay the health insurance costs and disability pensions for young, well-educated individuals like myself who are debilitated and crushed both physically and economically. At present, I am 27-years old.

It may be that the amalgam lowers your ability to withstand EM fields, but if your body is allowed to rest during walks in the forest, at night and so on, you are better able to withstand them. Today, there is no place free from mobile radiation. This means that those of us suffering from acute electro-hypersensitivity can't find housing and are forced to live in some isolated cabin (if we can find one) or move around in trailers that can be parked behind some mountain until the next base station is erected, and then we must find a new temporary haven (if there is one). At the same time more and more people are becoming ill because their bodies are deprived of all chance for recreation and rest from the biological active radiation that are microwaves, even at levels well below the present threshold values (even if the mobile industry does its best to claim the opposite). (Letter 150)

The Swedish Association for the ElectroSensitive, FEB, presents a survey from 1997 concerning the housing situation of its members.

FEB - The Swedish Association For the Electrically and VDT Injured³³ – conducted a survey among its members in 1997 as to whether their housing situation may have been altered due to the electric environment or base stations for mobile telephony. The replies provide a frightening and alarming picture.

A total of 185 members sent in replies with reference to our question of whether they had been forced to move due to the electric environment and/or mobile telephone masts.

173 persons reported that they were forced to move due to the electric environment. These moves took place during the years 1985, 1989, 1991-97. Among those who reported they were forced to move due to the electric environment was one individual who has moved 15 times since 1995, and has lived with friends, in trailers and so on. Another individual has moved countless times since 1989, lived in cabins, houses with the electricity shut off, abroad and so on. Yet another individual has moved six times since 1988. A severely afflicted individual has been forced to move countless times and can no longer live in any building and instead lives in a Volkswagen bus!

43 persons reported that they were forced to move due to mobile telephone masts. The majority of them reported that this took place in 1997.

Out of the 185 persons who replied, 31 persons reported that they moved due to both the electric environment and mobile telephone masts.

All in all, the survey presents a frightening picture of the housing situation for the electro-hypersensitive. They are forced to move out of their homes, live with close friends, their parents or adult children, in cars, in basements or to move to different towns. They are forced to live out of backpacks, in housing without modern conveniences, in cabins and trailers, in summer cottages, weekend cottages that has gone through EMF-reduction, trailers in parking lots or camping grounds. One individual lives in his apartment during weekends and evenings and at his son's electricity-free summer cottage the rest of the time. One person in upper Norrland³⁴ who was unable to pay the rent due to his electro-hypersensitivity was evicted and lives in his car. Another reports a desperate need to move but has nowhere to go. Yet another still lives in the harmful environment since no alternative has been found. One person writes, "I can be in the basement, pressed up tightly against the outer wall" on account of a mobile telephone transmitter. One person moved from a permanent address to a summer cottage with the address "The field by the edge of the woods". One person lives in a hut and a trailer in a mountain farming area. One person had to move out of the actual house and lives in the electricity-free garage!

The compilation shows that something must be done about the electromagnetic pollution and our conclusion is that electromagnetic free zones are necessary in order for the electro-hypersensitive to be able to find places to live.

³³ Now named: The Swedish Association for the ElectroSensitive.

³⁴ Northern Sweden.

CASE HISTORIES

NN, 39, self-employed in the electronics industry

NN got sick from his cellular phone in 1993 after switching from a stationary to a mobile model. The stationary equipment had used an antenna on the roof and did not produce any problems, but after changing over to the mobile model, the problems began almost immediately. He was forced to move out into the forest during the autumn of the same year, since he could no longer tolerate anything. He lived without any form of electricity, using kerosene, firewood, butane gas and candles instead. He lived in his parent's summer cottage, but still maintained an apartment in town. After about a year in the summer cottage he began to feel worse. It turned out that a while back, telecom company Comviq³⁵ had set up a transmitter approximately 500 meters from the summer cottage. Since NN didn't have anywhere else to go, he remained at the summer cottage for an additional two and a half years despite the deterioration of his health.

During that period, Europolitan set up their transmitter in the same mast, which made the environment even worse. NN could take walks in the direction that lead away from where the mast was located, but slept very poorly at night. After about another year, Telia built a huge mast next to the previous one, on which all three operators then placed their GSM and NMT transmitters. For NN, this was the last straw and meant he had to run off to "nowhere". He lived with his mother for a while, but after a few months Comviq set up a transmitter on the building opposite, and so it was time to run off to "nowhere" again. As of December 1, 1997 NN has a new apartment, and it worked out well until three-thirty p.m. on Christmas Eve, when his neighbor got a digital cordless telephone for a Christmas present, "so now I'm on the street again and can't hold out much longer"

NN, 38, foreman in the construction and installation business

NN became electro-hypersensitive after having his amalgam removed. He had to shut off all the electricity and could only be in one room of the house, as far away from the incoming electric lines as possible. He began using a wood-burning stove for heating, candles for illumination and bought a butane stove for cooking.

After a half-year NN moved out to the archipelago and lived there for seven months. His condition improved somewhat during this time. The regional social insurance office then required that he work part-time, which he struggled to do for eight months, after which his condition deteriorated drastically. At the end of that period he acquired a cellular phone, a Nokia 2110, and after two hours of use "it bubbled as if my entire body was carbonated", he couldn't tell up from down. Not even turning off the phone helped, the symptoms only ceased when he took the batteries out. NN was now in such poor condition that he couldn't remain in the house (due to such things as a tin roof, a water-borne heating system, a main road approximately 30 meters from the house, a telephone mast approximately 500 meters away). During October-November he had to live in a garden shed consisting of six square meters while the heating system (pipes, radiators) were removed.

Even though NN only stayed in one single room his condition continued to get worse. The family has now purchased a cabin in which they live without any electricity. He can now sleep at night and no longer suffers from headaches. The family built a laundry facility about 35 meters from the house, and cold and hot water is fed from it to the house. The house is heated by a wooden stove and a butane refrigerator is used. Even so, NN is still vulnerable. He was totally "wiped out" for a week while a logging machine was at work in the area. He can also feel newer car models, such as a Volvo 850 SE, probably because of some anti-theft device. The neighbor's new car may be the reason why NN has to move again!

NN, 34, economist

In 1991, NN lived with her husband and children in a row house outside of town. She was very happy at work and her chances for advancement were good. She suddenly became very ill in March of that year, and even though doctor after doctor was consulted, her condition kept getting worse. Electro-hypersensitivity was diagnosed after almost a year. By that time her condition was so poor that normal EMF-reduction measures were of no help. Her condition deteriorated and in the spring of 1992 she could no longer work and instead went on full-time sick leave. After a few more months she could no longer continue to live in the row house, either.

³⁵ The second largest cellular operator in Sweden.

NN lived for about a year in a garden shed at her parents-in-law's country place in the archipelago, while the rest of the family remained at home in the row house. After a great deal of searching the family finally found a house that met all the requirements, and after some major expenses for EMF-reduction, NN could move back home again.

Slowly but surely she started to get better. But then she got pregnant, and even though all the experts (doctors, maternity clinic, a specialist maternity clinic, electro-hypersensitive persons and others) assured her that there wouldn't be a problem, NN became much worse towards the end of her pregnancy. Just before the delivery date, in July 1994, her condition got so bad she wasn't sure she would survive. She was moved to a construction shed her father rented and had set up in the forest next to his country place.

During the autumn, winter and spring 94-95, she lived in the archipelago again in the rented construction shed, now set up in a parking lot next to a beach. Other better housing alternatives were constantly looked for and tested. When summer came the parking place was needed, and NN had to move. Her parents-in-law had also clearly stated that they were no longer able to help. After a great deal of searching a place was found for a trailer. But during the autumn of 1997 Comviq set up a mobile telephone mast approximately 200 meters from where the trailer was parked, and NN's condition once again deteriorated. In addition, she could no longer park her trailer in the vicinity of her home, as before. The situation grew desperate. Where was she to go? The city and its surroundings had already been searched, and no good alternative had been found. Once again, NN found refuge in the forest next to her father's summer place, about 1,5 hours by car from the city.

NN now lives in the trailer all alone out in the forest, with no car, TV, telephone, radio, electric lighting, electric heating, without any of what are considered to be the necessities of life.

NN, 54

In 1990, NN, together with her family, escaped from the electric environment in the city to an old house in the countryside. The family installed a large, modern wood-burning stove, and NN began to feel somewhat better (less electro-hypersensitive). She requested help from the municipality to complete comprehensive EMF-reduction, but was refused. Soon afterwards, the local housing authority granted Comviq a building permit to erect a mobile telephone mast. NN had asked that consideration be given to her hypersensitive condition, but none was taken.

When the transmitter became operational in 1996, NN became very ill, suffering from severe pain, particularly in her head, eyes, ears and legs. She could barely stand to stretch her legs out due to the pain. No pain-killing remedy helped. In addition, she became severely nauseous (similar to sea-sickness), grew dizzy and weak, which further impeded activity.

Moving away from the low-EMF house in the forest was made even more difficult by the fact that her husband became ill with respiratory problems and extreme tiredness, which resulted in his being bedridden most of the time. Friends finally came to their aid with a metal-encased house, grounded by powerful copper cables (of a Faraday cage variety).

The situation is now completely untenable from both an economic and practical point of view, even if NN and her husband suffer less in the new house. Both are worn out physically, and NN has developed extreme hypersensitivity, primarily towards cellular phones. As a result of this she is only able to get about by means of a walker outside of the house and yearns for a mobile telephone-free zone. (Letter 200)

In the statement below, the suspicion of a possible connection between the increase of high frequency fields and the rapid increase in the number of individuals on sick leave is expressed:

I was afflicted in 1989, and since that time I have changed addresses eight times, five of which during the last year. It is truly a question of being a refugee in your own country – seeking refuge from high frequency fields, microwaves and frequency combinations due to such things as cable TV lines, modern cars and alarms, and cellular phones, mobile telephone masts, as well as increased magnetic fields due to grounding flaws or improper installations, situations that we have no control over due to the indifference of others and real estate companies.

At the same time as there has been an increase in computerization, mobile telephone masts that have sprung up everywhere and the new frequency environment that has arisen, a dramatic increase has occurred regarding the number of individuals who go on sick leave. In addition, there has been an increase in allergies and even depression, aggressiveness and violence in society.

In my municipality, preparations were made last year for using cable TV to connect to the Internet. Things are now so spoiled here that I can't remain due to nausea, heart and respiratory problems, lack of energy and pain in my head. Even outside of town I can feel how strong the microwave field has become. The number of people on sick leave increased by 27 percent last year, and discussions as to why have been lively. For me, the connection is obvious.

Before, I was able to walk around town without difficulty, but not anymore. In Stockholm, however, I can still take a walk.

The most serious incident I ever encountered that dealt with a combination of frequencies took place on the island of Åland. Four wind power stations had been erected, with a mobile telephone mast in the middle. We approached the grouping but were forced to turn back. It felt as though there was something paralyzing my breast. Later on, I learned about a number of inexplicable fatal one-car accidents there.

More research is desperately needed into high frequencies and microwaves, as well as the combination of frequencies. For that matter, such alarming research results already exist that the expansion of IT should be stopped and the National Institute of Radiation Protection should take its responsibility and see things as they really are.

It is inexcusable that people in our country develop such severe problems that they have to run away in order to survive while the authorities do nothing. Even those who have gone through EMF-reduction of their homes have to flee due to the mobile telephone masts.

An electro-hypersensitive individual asked Europolitan where it would be suitable to build a house and received the following answer: Not too close to a lake because microwaves ricochet off the water surface and can be spread over a very large distance. There should be a thick forest extending several kilometers between her and the mast.

Since I suffer from electro-hypersensitivity, this means I am unable to go to a beach if there is a mast in the area. Simply deplorable!

Plans for the future, including broadband technology and the resulting combinations of frequencies, such as making phone calls via cable TV or the electric lines, or Internet via cable TV or the electric lines, is very frightening. A technology that will certainly lead to disastrous consequences. Stop the expansion and check the health of those living close to where the masts have been erected, where microwaves have increased, and where the expansion of broadband has occurred. It is particularly urgent in areas where this has occurred via cable TV.

It is my opinion that permits for base stations for mobile telephony should be treated in the same way as permits for dumping materials that are hazardous to the environment. (Statement 9)

Finally, an engineer who provides a possible explanation as to how electro-hypersensitivity could be initiated. Could the explanation be that when the electromagnetic exposure reaches so high a level that our inner organs can no longer withstand it and therefore begin to react to increasingly lower levels of electromagnetic radiation? The solution in that case would be moving to a radiation-free location.

I myself am not electro-hypersensitive, but have had many years experience of conversations (mainly telephone conversations) with electro-hypersensitive individuals. These phone calls find their way to me because I am considered to be an expert regarding the technical aspects – what measures can be taken to improve the electric environment. I can confirm that the so-called syndrome as a whole is consistent, with certain variations, mainly with regard to the degree of hypersensitivity, and after speaking with hundreds of electro-hypersensitive individuals from all over Sweden, I do not have the slightest doubt that the problem is real.

The combination of electrical-chemical hypersensitivity is very common, more common than most people realize. Many electro-hypersensitive individuals refrain from mentioning their chemical hypersensitivity so as not to risk their credibility any more than they've already done. It is not uncommon for a person suffering from severe electro-hypersensitivity to have been exposed to a hazardous chemical substance, and to be aware of this.

Natural selection leads to a development in which well-adapted organisms survive and reproduce. The result of this is that most of the characteristics and behavioral patterns of living creatures have a survival value. Therefore, for every observable behavior pattern, it is interesting to pose the question: Does this behavioral pattern have a survival value?

In certain cases it can be difficult to discern the survival value of a behavioral pattern. Accordingly, allergies, which are a form of hypersensitivity, are described as a condition in which the immune defense overreacts, “runs amok“. Even when it comes to multiple chemical hypersensitivity (MCS) and electro-hypersensitivity (ES), the reactions appear to be irrational, since they occur at levels that presumably should not be harmful.

It is my contention that these reactions nonetheless belong to a reaction pattern that in actual fact is logical and well-adapted. Hypersensitivity appears when *our autonomous environmental defense system* has been overloaded in such a way that a change of environment is necessary.

It is hardly a controversial contention when I state that we are equipped with an autonomous environmental defense system (“autonomous“ because it is not consciously controlled). Included in this system are the liver, kidneys and bone marrow. The liver and the kidneys take care of toxic materials, bone marrow is a part of the immune defense system. This autonomous environmental defense system can deal with moderate environmental excesses without our having to worry about it. Most of the time, we are not even aware of what is going on within ourselves.

When environmental overloads cannot be taken care of at a lower level, the standard solution is *relocation*. Relocation to a better place, where the environment is less harmful. But relocation is not something that can be implemented by the autonomous system. Relocation requires a conscious decision. The signals that go from the autonomous system to the soul/psyche/consciousness aimed at bringing about relocation can be experienced as the unpleasant symptoms of an illness. The purpose is to convince the brain that the environment is unsuitable and that it is important to get away from there.

If the autonomous system fails to effect a relocation, the signals become increasingly stronger, and they begin to appear at progressively lower levels of irritation. This phenomenon is called hypersensitivity.

The whole phenomenon is logical. If it were possible for an engineer to construct a living creature, he wouldn't be able to do a better job. He would put in a number of automatic control systems, which, when overloaded, sound an alarm.

Therefore, hypersensitivity is not an illness, and doctors conducting examinations often find nothing wrong. Hypersensitivity is a warning signal that should be taken seriously, even by those who are not directly affected. Dr Björn Gillberg [a famous Swedish environmental scientist] said: “We should be thankful to those with allergies, because they warn the rest of us of things that may be harmful.“ The same can also be said about other forms of hypersensitivity. (Letter 96)

Reactions

What many of us have also had to put up with is the total lack of understanding from doctors and others. There are those who still believe that our problems are caused by nerves. Many of us would probably be happy if that was the case. After all, there are medicines for nervous disorders. What is there for us? (Letter 403)

One of the hardest things for the electro-hypersensitive to deal with is that their credibility is often questioned. This results in a feeling of their integrity being violated, particularly when dealing with doctors who don't believe that the symptoms are real but instead have a psychological cause:

When you suffer from electro-hypersensitivity, you get very little understanding from the majority of the doctors you see. The general attitude seems to be that electro-hypersensitivity doesn't exist and that it's just a psychological condition. (Letter 383)

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I sought help a number of times from the doctors here at the hospital when my situation was acute. To be on the safe side I called first to ask if they would admit me as someone suffering from electro-hypersensitivity. One of the chief physicians answered: Dear lord, come back down to earth, preferably with your feet first. There is no such thing as electro-hypersensitivity! I didn't get any help, and after making the telephone call my situation deteriorated even further.

I haven't found any public authority that cares about me! Abusing an animal can result in a mass-medial uproar. The authorities can forbid a person from owning animals if he has abused them, but the authorities willingly allow people to be abused by modern technology. (Letter 273)

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One doctor insinuated that I could be suffering from panic anxiety, stating such factors as that going into stores made me very ill. I was made to sit on a stool next to the delicatessen counter, which made me very dizzy and weak. Standing in a checkout line was very difficult; I didn't understand why then, but I now realize that I was affected by all the electric and magnetic fields as well as all the cellular phones.

After a while, I was given a referral to the Occupational and Environmental Unit at the hospital. I quickly understood that their treatment program was based upon the theory that electro-hypersensitivity should be viewed from the perspective of a psychological explanatory model. Since I had appointments with the nurse, the doctor and the welfare officer all on the same day and since riding in cars also made me very ill, I called and asked if they had a room with low EMF. They answered that their ceilings were very high, so it wasn't necessary. The staff didn't want to turn off the fluorescent lamps when I asked them to. I was given about 500 questions to answer. After about ten minutes, I had to go out. I sat in the park and answered them all. Are your parents divorced? Were you often truant from school? Are you happy with your work? Does your husband believe you? What is your opinion of the EU?

The doctor suggested that I move into town – electricity was a cure for electro-hypersensitivity. The fact that ironing made me ill was a sign of depression over seeing all the un-ironed laundry waiting for me. He wanted to give me about a half-year's prescription for Cipramil³⁶ in about six months time. I was too sick at the moment.

I was given a referral to a psychologist. I realized that I had to go, in case I had to see the same doctor again. Since riding in cars makes me so ill, I requested a psychologist in my own municipality. I was therefore referred to a specialist in psychiatry for reasons dealing with depressive and psychosomatic disorders. I wasn't suffering from those kinds of factors.

³⁶ An anti-depressant.

I was on sick leave for about two years with a diagnosis of electro-hypersensitivity. In July 1997 my medical benefit was revoked, since there is no evidence that electromagnetic fields can cause the symptoms described by individuals with so-called electro-hypersensitivity. Since I wasn't "sick", I was requested to return to work as soon as possible. My symptoms began immediately, but I forced myself to stay on. After about fifteen minutes I collapsed, I couldn't remain on my feet. I became very ill and had to be helped out.

The worst of it all is not being believed by doctors. In my medical journal, it states that I had begun EMF-reduction at home in the hope that my problems were due to electro-hypersensitivity. Furthermore, that I am more and more convinced that electricity is dangerous. I find this to be very offensive. (Letter 412)

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I contacted the hospital's allergy department by telephone. The senior physician said 'you know that this is considered to be 90 percent psychological'. I ended the conversation immediately. I next called the safety engineer, who said the exact same thing. However, a few days later he showed up with a so-called Elfix³⁷. It buzzed everywhere in the room except next to the visitor's chair and the main entrance. He also said that this was nothing to be worried about, but he would get a filter for me to test.

This never occurred, since I contacted an experienced nurse at the municipal health service who, after consulting with the doctor, told me to go directly home and not to return to work until after the doctor had seen me, a week later. By that time I was already so severely injured that after only 2 1/2 months I wasn't able to enter the premises.

The safety engineer and the head of the division did not hesitate to sign my report for an industrial injury.

I went on sick leave on November 16, 1992 and haven't worked since. After being on sick leave for about a year I was given a disability pension. The diagnosis: "Allergy". I tried to get the diagnosis listed as electro-hypersensitivity, but didn't succeed. However, later on the doctor did add the following in parenthesis: "The patient is electro-hypersensitive and will be a long-term case." At the time, one of the employees at the regional social insurance office had been on extended sick leave due to electro-hypersensitivity. Maybe that was why my diagnosis was approved!

After a while I was called to the allergy clinic for an analysis of the industrial injury. It was the same doctor I had spoken to on the phone, and he hadn't changed his opinion. He had even gone so far as to state in an interview with a local newspaper: "It is easier to believe in gnomes and trolls than in electro-hypersensitivity." Rejection, of course!

In a follow-up inquiry from the Occupational and Environmental Medical Clinic, I pointed out the inappropriateness of allowing a doctor with that sort of attitude to conduct analyses of occupational injuries in connection with electro-hypersensitivity. I also included a photocopy of the newspaper article. At a meeting with the clinic, I once again stated that the doctor in question should be removed from this assignment, since his statement about electro-hypersensitivity cannot be considered objective; it is instead greatly influenced by his own opinion. (Letter 396)

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At the beginning I wasn't given a time for a doctor's examination. I had heard that doctors know nothing about this and can't do anything about it, so there's no point in going to a doctor. But my mother-in-law insisted, saying: In any event you have to think about us and your husband and children. At least give it a try!

That's why I went to Previa, which is our company healthcare provider. The doctor who saw me said that she was afraid that I would get trapped in my syndrome. I didn't understand what she meant – after all, I had come to investigate it and to see what I could do about it. I don't feel that I got much support from that direction. (Statement 21)

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³⁷ A simple instrument that detects electric fields sounding a beep.

After having witnessed how a colleague ran back and forth between different unsympathetic doctors, I stated right over the phone that I wanted to be placed on sick leave on account of electro-hypersensitivity, but was turned down everywhere. I finally requested an emergency appointment at the skin clinic. The doctor there knew nothing about my condition. He couldn't put me on sick leave; I did, after all, look healthy. He was also afraid of what the regional social insurance office would say.

I held my ground and he went and fetched a more experienced doctor. She pointed out that she had worked extensively with computers and experienced no problem whatsoever. In addition, there were doctors there conducting research into electro-hypersensitivity and they hadn't established that electricity caused problems. She thought I should keep on working.

I left there in tears, feeling very degraded. They treated me as if my illness was imaginary. (Letter 336)

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I was referred to a professional dermatologist. The leathery skin with visible veins that spread in patches across my face as well as the small calluses on my forehead and an acne-like irritation on my cheeks and jaw didn't lead to any measures being taken. I received a referral to occupational medicine. Three months had passed since I had become extremely ill. I was met by fluorescent lamps and computers that were turned on. I had to fill in the questionnaire form outside - the nurse refused to turn off the fluorescent lamps in the area I was supposed to sit in. I was out in the cold for an hour and a half, my hands were frozen, I don't know how I managed to answer the questions... I had already lost confidence in occupational medicine.

The doctor's appointment was short. Fluorescent lamps and computers that were turned on. I asked him to turn them off, he did so with an irritated expression. How can a doctor who considers himself to be an expert in electro-hypersensitivity receive patients with electric apparatus turned on? It quickly emerged that he didn't believe that electricity could make you sick... therefore my condition had psychological causes. I met the psychologist a few times, all he could offer was hypnosis or Cipramil. I declined! (Letter 294)

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I made an appointment with the company doctor, who didn't believe that my problems were work-related. He was very unpleasant and made me cry. He then asked if I was having marriage problems.

I made another appointment with the company doctor who only talked about my psyche and scoffed when I asked about electricity. He wanted to prescribe anti-depressants. I then saw my doctor at the community health center, who had never heard of electro-hypersensitivity. He took a lot of tests anyway in order to be able to exclude the possibility of illness.

The regional social insurance office sent me to occupational medicine. I went through light-testing there; I was exposed to a number of fluorescent lamps. It was horrible, I was ready to faint when I got out and I sat hugging myself in the chair and cried before I was able to make my way home. I put up with it for two days, but on the third day I refused, since they wanted to increase the amount of time I was to spend exposed to the fluorescent lamps. (Letter 227)

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After that came doctor appointments and therapy (which meant that one was to be exposed to the source of the problems in order to get over the idea that one couldn't tolerate electricity). (Letter 179)

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My condition deteriorated at the same time as I felt that healthcare was closing door after door for me. Facing this inexplicable new situation, I stood, as I saw it, completely alone. To tell a regular doctor that I could sense electricity could mean being classified as a fool, being snubbed or even worse. I kept quiet and suffered. You have to protect yourself from having your integrity violated in the healthcare system.

At times - not by everyone, of course - it's been said that we electro-hypersensitive imagine our symptoms after having read too many newspaper articles on the subject. We are supposed to have been lead like a flock with no will of its own into an epidemic that doesn't exist in the physical world. But - there is no way that I could have been influenced in 1986 by something that would only start being described in the media a year later. You can't see around corners.

We know that the phenomenon is international and that research is being conducted. What is important is to stop all the so-called psychological talk and try to find what is having a biological effect on people in our surrounding environment. (Letter 174)

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We are not seeking any form of economic compensation nor do we want compassion. What we do demand, however, is to be taken seriously and to be believed by doctors and others who maintain that there is no medical evidence to prove that electro-hypersensitivity exists. To suggest that we would imagine or make up something that has changed and damaged our lives in so radical a fashion is a concept that ought to collapse on the basis of its own absurdity.

It would have been valuable if a brochure had been available at the healthcare center during our first contact with a doctor. It could have contained advice as to how to avoid dangers and elements of risk in day-to-day life as an individual suffering from electro-hypersensitivity. Instead, we made many errors that accentuated our symptoms and delayed recovery. (Letter 236)

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During the winter I was in contact with a professional dermatologist to conduct extensive allergy testing on my back. No one believed my explanations about symptoms when in proximity to computers and fluorescent lamps. My skin specialist said the symptoms were caused by my nail polish when I rubbed my eyes etc.

In any case, I began to work part-time using an LCD monitor, but in an open-plan office full of computers, fax machines, printers, fluorescent lamps etc. My condition slowly deteriorated; my eyes grew tired (“teary-eyed”), I became abnormally tired, there was pain in my wrists and elbows, there was a sort of tingling in my body and it felt as though my heart beat very hard. One day I called my company doctor and told him how I felt. He didn’t believe me and thought I should go to work anyway. (Letter 160)

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When this happened I went to my doctor. I couldn’t go on any longer. I was placed on sick leave and was away from work for about five months. During that time I was given an appointment to occupational rehab. Totally worthless, if you are expecting any help. All they could provide was cognitive treatment for tolerating computers! They didn’t consider EMF-reduction to be of any help. (Letter 387)

The following statements/letters firmly reject the notion that electro-hypersensitivity is a psychologically conditioned response. It is absurd to think that the psyche could cause the types of symptoms exhibited by the electro-hypersensitive:

A person who becomes ill can gain a great deal of knowledge and experience about the way the real world works. With regard to my computer monitor injury, I discovered that both trade unions and the general public possessed this knowledge. It is surprising that the doctors I saw in connection with the investigation into my injury lacked a corresponding insight and knowledge.

One popular theory on the part of doctors is the one dealing with psychosomatic illnesses and that problems were the cause of my dramatic symptoms. I reject this in the most emphatic terms. Their attitude resulted in my being treated in an insulting manner and has further aggravated my already difficult situation. From a historical perspective, their attitude has always been common in the case of new illnesses.

Another common notion is that the individual is inferior and weak, regardless of what he or she has been exposed to. Problems and difficulties have always existed, but in order to produce my obvious, objective, visual symptoms, one or two factors must have come about in recent years in addition to the problems mentioned. (Statement 29)

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Whoever reads this may be convinced that electro-hypersensitivity is a psychologically conditioned response. I can only state that I am not going through menopause, nor do I have any fear of computers. I don't suffer from panic anxiety disorders and as yet (funnily enough) have not been afflicted with any form of depression or anything else that indicates a deterioration of my mental health (even though it should be the only real alternative in my situation).

I studied psychology for one year at the university before becoming electro-hypersensitive, so I don't look down on psychology in itself; on the contrary I find it interesting, but I still both believe and know that that's not where the problem lies when it comes to electro-hypersensitivity. Taking myself as an example, I had never felt as good as when I became ill. So mental illness definitely does not fit. In addition, I don't believe that symptoms such as extreme pain caused by cellular phones can be produced by psychosomatic means. (Letter 162)

There are those who eventually came into contact with doctors who could help them:

After I became ill, the treatment I received was very strange. There were unsuccessful attempts made at trying to treat my hypersensitivity to solvents and electro-hypersensitivity within psychiatry, but no occupational anamneses were made. Those doctors who feel that the problem is work-related are ignored. Medical Advisor to the National Health Insurance Service Associate Professor Carl-Johan Göthe, Stockholm, wrote eight pages in an occupation injury investigation in 1995 *without meeting me* and gave the diagnosis ESS (Environmental Somatization Syndrom). These are theories expressed only by Associate Professor Göthe, Senior Physician O. G. Nilsson and Professor of Odontology C. Molin in a paper from April 1994.

Dr. Göthe's opinions from 1995, stated on eight pages, are filled with errors. No consideration is given to the doctor with training in psychiatry who states the following: "It is my experience that the clinics for occupational medicine only partially fulfill the responsibilities expected of them: to remain up-to-date with the risks in working life. In certain areas, the clinics for occupational medicine have a greater tendency to deny facts that have emerged than to acknowledge the risks that exist."

They didn't wait until the neurological examination was finished, so Dr. Göthe never saw it. But Senior Physician in neurology A. Walter states the following on January 8, 1997: "Finally, the examination of the cerebrospinal fluid displays a *mild barrier injury*, which also supports to a certain extent the conclusion that an organic influence on the brain, blood-brain barrier, exists. It is my opinion that the patient will suffer from a permanent neuro-psychiatric condition as described above. [...] It is probable that the patient experienced an organic impact on the brain earlier in life, in which the effects of solvents can be a possible cause of the current handicap". (Letter 140)

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I now went to our company doctor, since I began to suspect it was work-related. However, she didn't see any connection but instead, through her choice of words, insinuated that I was lazy. She placed me on sick leave for two weeks. When I called her after two weeks and asked for an extension, I remember that I cried with despair; she thought another week should be enough if I was so depressed that I started to cry.

I went back to work again, but I then felt that I just couldn't manage any longer. A few colleagues helped by giving me the telephone number to someone who they knew to be electro-hypersensitive, and she provided me with the telephone number to Doctor Birgitta Bruner. The first available appointment time was four weeks away. It was Christmastime then, so I used the last of my vacation time and all the overtime I had put in, and in that way I was able to work as little as possible. My condition had now deteriorated to the point that I thought I would die every night when I went to bed.

At my appointment with [doctor] Birgitta Bruner, I was given help with a diagnosis, an explanation as to what caused my symptoms, advice and medication (that is to say vitamins and minerals) as well as help being placed on sick leave. (Letter 117)

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As if all the problems and the terrible isolation that followed weren't enough - doctors and the regional social insurance office were very skeptical and difficult to deal with. I was sent to Environmental and Occupational Medicine (who were considered to be experts in the field). I have never felt so humiliated as I was by the way the doctors there treated me. The first thing they suggested was a psychological test done on a computer. At that point I had just told them that close proximity to computers caused respiratory problems and severe headaches.

It was very difficult to find a doctor who took the whole thing seriously. I finally did and tests were taken that no doctor had previously run. They showed that I suffered from chronic encephalitis and that my condition was aggravated in an electric environment. (Letter 312)

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I would like to take the chance to say something about the reaction I received from employers and doctors during this time, as well as from the authorities.

The company doctor and I were called to a meeting with my employer. They listened while I described my situation. At that point I had access to a computer situated in another room, not in my own workroom, and I asked that this be continued. But they said that this would only reinforce my perception that it was the computer that affected me; no, I was to have it in my room! It was quite obvious that they didn't believe me, although they didn't say so in as many words. I then made a complaint to the personnel department, and they took charge of the matter in a somewhat better way.

My first contact concerning my problems was with the company doctor. There had already been a fair amount written about electro-hypersensitivity and amalgam, nevertheless her attitude was very reserved. She had no knowledge whatsoever on the subject, nor did she appear to be willing to acquaint herself with the problem. I was then forced to find someone who had both the knowledge and the experience. At last I found Dr. Ulrika Åberg in Skövde. Finally someone who listened, asked intelligent questions, came with advice and also helped me with practical matters.

During this period I also had an appointment at Occupational Environment Medicine via a referral from the company health service. I told them my story, and afterwards I was given a report from the meeting. A number of gross errors had been recorded. I wrote to the person in charge and asked that these be corrected, but received the reply that he didn't think this was necessary. I had planned to take the matter to the director of the clinic, but didn't have the strength for it.

I was eventually referred to the Amalgam Unit at Uppsala University Hospital. I received a very good reception there. Many tests were taken and they had contact with dentists. At the start I had very high levels of various types of metals in my blood, which later abated and have now decreased considerably. I was also given answers to my questions, which I hadn't found anywhere within public healthcare. I of course had much more contact with healthcare than I have presented here. That very difficult period of time is now behind me. (Letter 139)

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In the beginning it was difficult with doctors and the regional social insurance office, but after a few months I went to my company doctor, who I really must say did her best for me. When the regional social insurance office's doctor protested in the beginning, my doctor got very angry and informed him in no uncertain terms that she certainly didn't put anyone on sick leave for no good reason. After that, I never heard from him again. The other personnel at the regional social insurance office have been wonderful and I feel as though I've been given their complete support; in this I realize that I am privileged. (Letter 349)

At times it can be a relief to come down with an established illness in addition to electro-hypersensitivity:

My life changed in 1997. After a long process with the typical symptoms for electro-hypersensitivity, I received the diagnosis "computer monitor dermatitis" from an understanding doctor at the occupational health center, with the explanation that it was a matter of illnesses of a contemporary nature. After that, there was a series of specialist consultations, and the attention I received was quite varied. At times it was extremely degrading and condescending, and at the best of times contained the honest answer that the doctor in question couldn't explain, for example, my red, swollen skin and would prefer not to involve himself in my case. The feeling of helplessness I felt is difficult to express. All of my symptoms indicating serious ill health were ignored, and after many attempts at working in an office environment, I was forced into a long-term sick leave.

Now, twelve years later, I have a disability pension and have recently been diagnosed with MS. Finally I received dignified attention from the healthcare services. I have been treated with respect, empathy and I have been believed! I am still electro-hypersensitive, with the same problems and symptoms that I have been seeking help for the entire time. The difference is that I have also been diagnosed with MS and have been afflicted with new functional disabilities.

Both MS and electro-hypersensitivity are illnesses that science cannot completely explain, but I have experienced the enormous difference of being a patient with an "accepted" diagnosis! (Letter 156)

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In January 2000, I underwent an operation for a tumor in a salivary gland. The surgeon informed me that in all likelihood it was a malignant tumor that would require chemotherapy and radiation therapy. That diagnosis lasted for three weeks. I spoke with the surgeon two times a week during that period, and it was a difficult experience, but nowhere near as difficult as the day in July 1996 and the months following when I had to admit to myself that I was electro-hypersensitive and could no longer lead a normal life. It was a terrible shock and the source of much sorrow, and in the middle of it all I was forced to work at convincing relatives and friends, my employer, doctor and the regional social insurance office to believe in my illness, which is not accepted and therefore does not exist.

In the end it turned out that my tumor was not cancerous, but I was able to experience how it felt to possibly have an approved illness. The regional social insurance office, healthcare and even personal friends were ready to help in a totally different way than when I became electro-hypersensitive. (Letter 210)

When "Centrum för Särskild Miljökänslighet" (The Center for Specific Environmental Sensitivity), CSM, in Örebro conducted a three-year project to help the electro-hypersensitive, they concentrated on conversations with a psychologist as being more important than EMF-reduction right from the very start, according to FEB's local patient association in Örebro:

The association conducted a survey in June 1997: "CSM (Centrum för Särskild Miljökänslighet) – an evaluation from the patient's perspective", in which all of those questioned replied that their contact with CSM resulted in no improvement in their electro-hypersensitive condition. Some of them had even become worse after following CSM's advice! Our conclusion was that in reality the project did not provide anyone with help or relief. A large number of the patients felt that the reception and care they received was very poor.

FEB Örebro was given the opportunity to present their opinions to the Health and Medical Care Delegation within Örebro County Council prior to CSM's final report. The CSM project was conducted over a period of three years and we strongly question if there was sufficient technical competence within the work team. A technician from the Occupational Medicine Clinic was only available a couple of hours a week, and in addition there was no specialist competence with regard to issues concerning electric and magnetic fields. The project did, however, invest in a fulltime psychologist and in this way clearly showed where the emphasis was to be placed.

It is FEB Örebro's opinion that the CSM project, which cost the County Council a great deal of money, did not, unfortunately, lead to anything positive for the patients involved nor did it make any contribution with regard to research. (Letter 83)

However, not everyone's experiences regarding contact with doctors have been overall negative:

When it comes to the reception I received from healthcare services, there's not much for me to say. As for the removal of my amalgam, my doctor was unexpectedly positive. The times I have brought up the problem of electro-hypersensitivity with my doctor, dentist and in my limited contact with occupational healthcare, there haven't been any direct protests, even if there hasn't really been any real involvement, either. (Letter 152)

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On a psychological level I've felt OK the whole time; I have struggled to get well and have been treated properly by doctors. "You know more about this than I do", the first one said and supported me in every thing I tried. The Association For The Electrically and VDT Injured also do a great job, but ought to receive more funds to help out with measuring etc.

Good friends and thoughtful children have helped counteract the isolation that the course of this kind of illness naturally involves. (Letter 342)

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Added to this is also the struggle with the regional social insurance office, doctors, employment office and so forth. I have had the good fortune of being treated in a proper manner, even though their belief in the diagnosis is not always particularly strong. In their task of trying to find suitable employment for us, they send us to places that are less than suitable. The regional social insurance office sent me to the RFSV hospital for six weeks, which involved a direct deterioration of my condition. (Letter 269)

Many letter writers attribute the fact that doctors often have an unsympathetic attitude towards electro-hypersensitive patients to the outlook taken by the National Board of Health and Welfare. A few examples:

I then saw a number of doctors who couldn't help me at all; one laughed at me, prescribed strong painkillers as well as a recommendation for exercise out in the forest.

We have a hard time because healthcare services do not possess the proper knowledge, nor are they allowed to have it, thanks to the National Board of Health and Welfare. (Letter 259)

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I am a 38-year old woman and am electro-hypersensitive. That this could happen, and that it happened to me, came as a shock. The next shock came when I discovered the way society treats you. Receiving help from the Municipality or the County Council is completely impossible, at least in the county I live in.

I have seen a number of doctors with the same results: "It is probably psychological" = happy pills.

It isn't easy when physicians firmly maintain that electro-hypersensitivity doesn't exist, and when the National Board of Health and Welfare maintain that magnetic fields are harmless, and when Sweden's economy depends upon high technology. (Letter 137)

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Although I am quite hesitant to do so, I will try to convey some of my experiences of being electro-hypersensitive. I hesitate in part because constant headaches and major problems with concentration make picking up a pen difficult, and in part because I have noticed that those who have not experienced these problems themselves have a very hard time understanding what it's all about. This applies especially to persons in positions of power and others who feel they have medical competency in the field. My attempts at clarifying a cause relationship behind my health problems have been met with disbelief in a very demeaning manner. The Prime Minister is very proud of his "openness" with regard to the Holocaust, but is paralyzed in the face of discrimination that, in our present day society, destroys people with the wrong genes and who are afflicted by illnesses and then given the wrong diagnosis.

From the ailments, I began to believe I was suffering from burnout, even though I enjoyed everything: my family, my work and my free time. Today I know better, but unfortunately I constantly see others forced into the same trap due to healthcare's unwillingness to accept "uncomfortable" truths. They don't care when things become uncomfortable for the individual, just like in Nazi Germany.

In any case, I feel that the National Board of Health and Welfare should be dismantled. Their attempts, lasting many years, at trying to conceal the truth behind this major public health issue have ruined my life and the lives of thousands of other naive and honest citizens. (Letter 114)

But there are ways for doctors to get around the National Board of Health and Welfare's attitude:

After an extremely poor relationship with the regional social insurance office, I didn't dare take sick leave; instead I went unemployed for two years before I went on sick leave in 1996. The processing officer I was then given at the regional social insurance office was fantastic. I have been on sick leave since that time. Although not with the diagnosis "electro-hypersensitivity", because according to the National Board of Health and Welfare, that illness doesn't exist. Instead of a diagnosis, my doctor merely listed my symptoms. In any case, my doctor is invaluable. (Letter 381)

There is a great deal of bitterness towards the reception electro-hypersensitive often receive from various authorities:

Since I can't tolerate butane gas, I can't sit out in a trailer in the forest; instead we have looked for a suitable place to live and in so doing have gathered a great deal of knowledge. Among other things we lived in an apartment building, and that worked all right until an outdoor Christmas tree was set up. Frequencies that I couldn't tolerate arose, probably due to stray currents. My blood pressure rose to 240/150 and I became very ill. I was given a doctor's certificate that confirmed the seriousness of the situation, but the real estate company took no notice. All I could do was to flee out into the cold of winter.

That's the reality we live in, those of us who are electro-hypersensitive. (Statement 9)

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It's possible that the treatment received by the electro-hypersensitive has improved somewhat recently in step with the way the main media slant has changed. However, the result of the authorities' wait-and-see attitude to the problem is often that people in general feel it's OK not to show consideration to the electro-hypersensitive. As an electro-hypersensitive person, one often hears that "it's got to be psychological" or "I've read that it's a question of stress-at-work/light flickering/anything-at-all-other-than-electricity" etc. This would certainly improve if the authorities changed their attitude and were better at providing information about the effects that have, after all, been scientifically proven. In this context, testing on animals and cell cultures can also be of great value, since they seldom can be explained with psychosocial models but still at least make it highly plausible that similar effects exist in man. (Letter 58)

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It's not easy to try and sum up a "phenomenon" that for so many years has had and still has an effect on the lives of my family and myself on two A4 pages. If I were to get sick today I would certainly have gotten a more acceptable diagnosis such as "burnout" and then had a higher status, with access to all the resources available within healthcare.

I try to deny my symptoms due to society's distrust – it feels very humiliating to suffer from a disease that doesn't exist. (Letter 120)

According to many reports it is common that those in one's close proximity are also skeptical:

These ten years that have gone by since the first symptoms appeared have been very trying for me, since those around me doubted my words and possibly my mental capacity. I haven't received any help whatsoever, no allowance for home equipment or help in finding somewhere else to live. (Letter 243)

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There is very little understanding of our problems. No one in my circle of friends asks how I'm getting along with my electro-hypersensitivity – almost as though it were something to be ashamed of. (Letter 61)

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For me, electro-hypersensitivity is not merely an illness, it is a social problem and a problem related to knowledge. It is also a condition in which the afflicted person must go through a lack of understanding, compassion, the ability for displaying empathy and trust from the people around you. (Statement 31)

There are, however, those who have been met by understanding and interest from those close by. A few examples:

My illness involved a major readjustment for the entire family. However, I have received a great deal of understanding from my husband and daughter. They understood that it was serious and that I had to move. In general, I have been met with great understanding from those around me; friends, my employer and even on the part of the community. I have been lucky. (Letter 406)

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Sometimes you hear people say that there are less and less people who are electro-hypersensitive. How can they say that? Wherever people I meet hear that I am electro-hypersensitive, there are always one or two who tell me that they also react to computers, telephones and fluorescent lamps, that they have a burning sensation in their faces, prickling in their ears and skin etc., but not to the extent they have to stay home - yet. I believe that there is so much talk about electro-hypersensitivity being psychological that people are afraid to openly admit that they don't feel well, but when I come, they dare to open up about it, since I am already ill. (Letter 54)

Finally, a statement regarding what can have been the starting-point for the condescending attitude towards the electro-hypersensitive, as well as what the consequences of such position could be:

In all actuality it is *only* the patients who have any knowledge about this illness. But it is very seldom that one listens to patients. The fact is that it is even permissible to laugh at these patients.

The first contact I had with this problem came from reading an article in Svenska Dagbladet³⁸ written by David Ingvar³⁹. I was surprised by his attitude. In the article, he makes use of his professor's title and his popularity from TV to present what was really only his own private opinion. When I spoke with him afterwards, it came out that he really had no knowledge whatsoever of these mechanisms, he merely thought that it was silly to believe that electromagnetic fields could make anyone sick. And in addition, he hadn't met any patients to provide him with an idea as to what kind of people they were. But what he did was to make it permissible to poke fun at these patients. He set the standard.

After this I have very often heard, at medical congresses and at a conference dealing with amalgam held at the Dental College in Huddinge as recently as the day before yesterday, that when the issue of electro-hypersensitivity comes up, doctors laugh, both somewhat derisively and with a bit of embarrassment. That attitude is naturally infectious, both in healthcare and in research. It is difficult to obtain research money, and those researchers involved with this are also regarded as being somewhat ludicrous and foolish.

For decades, we have talked about the need for "early warning systems". The USA has invested billions of dollars to set up its Early Warning System against foreign missiles. We all know that canary birds used to be kept in mines to test to see if the air was poisonous to man.

Imagine – and this might make them to choke on their own laughter – that the electro-hypersensitive act as a form of "early warning system", showing that the electric environment we have built up is not healthy for people! This kind of environment has never existed before, and the human body probably has no defense mechanisms against it. We don't know if this is so – but we are conducting a gigantic, full-scale project, with no idea as to what the effects and the results will be. (Statement 7)

³⁸ A major Swedish newspaper

³⁹ A brain surgeon, now deceased.

Social Consequences

We sit isolated in our homes the way cripples did in days gone by. There are those who can't live at home and have to stay in a trailer out in the forest or commit suicide. This is a horrible discrimination of a group of people that society has made sick from amalgam and cellular phones, base stations, power lines etc. (Letter 168)

Being afflicted with electro-hypersensitive often involves extremely severe consequences: social isolation, an exceedingly limited existence, ruined finances. It is not just the electro-hypersensitive person who is affected; the entire family is:

Having an electro-hypersensitive person in the family affects the whole family. There are a lot of things we can't do that all the normal families take for granted. We can't even invite mother home for dinner, because she doesn't feel well in my apartment and can't spend time here. We can't do any of the small, simple things as an entire family, such as going shopping, going to the movies or visiting relatives, because mother can't join us. (Letter 145)

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Living the way my family does, as well as many other families in the same situation, involves a difficult financial situation that you worry about every day and a second-rate social life. Not being able to help the children as you would like to. The fear of getting worse and not knowing where to go. You are surrounded by computers, district heating, fluorescent lamps, low-energy lamps, cellular phones, telephone masts.

No one chooses to live this way voluntarily, and the life we live is not a full one. (Letter 247)

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As a family member who is healthy, I also lead a partially limited life. Here are a few examples from our reality:

We have a minimum of lamps at home. In the wintertime, we use a kerosene lamp and candles.

I can never run the washing machine when my husband is home.

I can never watch TV.

Having a computer at home and using the Internet etc. is of course out of the question.

We can never take longer car rides, which would be pleasant now that we are both retired and have the time.

Our private circle of friends is limited, since my husband has a hard time getting out for a visit. (Letter 274)

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I just wanted to say straight out something that everyone knows, namely that the consequences surrounding the problem with electro-hypersensitivity is not something reserved for the electro-hypersensitive individual, but in a very active way affects the family's innermost life.

In my case it has meant that if I wasn't emancipated before, I was forced to be so now, because I am the one who takes care of all the practical details at home. When I do the vacuuming, my wife goes out. When I prepare food, she disappears to the other end of the house to get away from the electric stove. There are any number of similar details that affect day-to-day life. (Statement 8)

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Before my wife became ill, we lived like a normal family. Our great interest in nature meant that we did a lot of traveling. We went skiing in the winter and had an extensive social life. We were very interested in dance. I am very interested in sports and watched nearly all the sports programs on TV. When my wife became ill in the summer of 1994, it meant the end of all that.

Last autumn and winter we lived completely without any electricity. A kerosene lamp was the only source of light we had.

I am obliged to take care of all the shopping my wife used to do. I have to take care of all the chores around the house that involve electricity, such as vacuuming, washing clothes, ironing, baking. When I want to watch something on TV or listen to the radio, my wife has to go out.

These days, we can't do a lot of the activities we did before, such as go to concerts, the movies or to a dance together. Family gatherings and sharing some good food together with friends will soon be a thing of the past. It requires so much planning on the part of others. It is difficult to ask them to turn off the main fuse to the house. That's why we usually socialize and get together with friends during the summer.

Another problem today is all the cellular phones that bother my wife. That's why it's difficult to go to a mall or take part in other activities. Or to travel with public transportation. I therefore always have to drive my wife to dentist and doctor's appointments. And they have to be short trips, since the car also makes my wife sick. It hasn't been modified to lower the fields. She can't drive the car herself, like she did before.

When new technical appliances keep coming all the time that make people sick, such as computers, telephones etc., the authorities and the manufacturers have to take their responsibility and help them.

The new popular word "burnout" is undoubtedly due to computers and cellular phones. But no one today dares talk about it; no one dares to slow this development in society.

I also believe that there should be crisis groups who can take care of the people and families who are afflicted, the way there are for other crisis situations. (Letter 119)

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I met my wife 30 years ago, a girl full of energy and with a large appetite for life. To her, life was full of possibilities, problems were there to be solved, nothing was impossible. We had eleven healthy years together, and it is this picture of my wife that I still carry with me, despite all the difficulties we have gone through.

Everything we did then has been taken from us due to her illness. We studied, worked, went often to the theater and the movies, we traveled a lot and have friends all over the world. We were very fond of going on outings in the car. Yes, we did everything that is a part of being alive and that makes life worth living.

Today, we can't even escape from our thoughts by turning on the TV and forgetting about our reality for a while.

There is no need to detail the long history of my wife's illness here. I can only say that it has been pure hell and a struggle for her to get well – a struggle with authorities, healthcare, housing and so on. All our energy has been spent on surviving, to get through each and every day on a practical level. We haven't had the strength or the time for individual development, intellectual stimulation, social interaction etc. (Statement 16)

There are also those who feel that electro-hypersensitivity is something to be ashamed of and best kept hidden:

If I were to look for a new job, in the end I would be forced to admit that I am electro-hypersensitive. There are not many employers that would want to hire a person who is electro-hypersensitive.

I avoid telling others that I have these symptoms. It is easy to be branded as a secondhand sort of human being, which in today's Sweden can involve major problems. One feels ashamed of not being perfect and strong, with good prospects for the future. (Letter 410)

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My meetings with electro-hypersensitive individuals have been very revolutionary for me. There has been and there still is strength, but also weakness, total solitude and enormous shame, divorces and poverty. Children leave them, husbands/wives leave them, relatives leave them, colleagues leave them. Their finances are in ruins. Where does the fault lie? I have spoken with many kindred folk, and they constantly say: “The doctors say that...”

I have friends who work in healthcare – I won’t mention in which capacities – and when we meet in town we don’t greet one another. People at their workplace, the general hospital, are unaware that they are electro-hypersensitive – and they don’t dare mention it! (Statement 2)

Many electro-hypersensitive individuals describe their social isolation:

I now try and make life at home as meaningful as possible, with long walks, needlework, doing crossword puzzles, reading books as well as I can and as much as I can manage. Unfortunately, the social aspect is not as fulfilling as before I became ill. (Letter 158)

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I was not able to visit my sick mother, be at her deathbed or attend her funeral due to my electro-hypersensitivity. I haven’t been able to go to doctors or hospitals to receive care, visit relatives, friends, acquaintances for the past ten years. I cannot take care of my errands in the community myself, since the technology there is harmful to me. I am as good as cut off from society and social contact.

Where am I to go when my husband is no longer by my side? There are times when I need assistance 24-hours a day, when dizziness knocks me completely out of commission. And where am I to go in a few years? There are no homes for the elderly that have gone through EMF-reduction, but there seems to be a National Board of Health and Welfare that has had EMF-reduction. (Letter 273)

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The way things are today I am completely isolated from the outside world. I can’t ride in a car, bus or train, listen to the radio or watch TV. Speaking on the phone makes me sick immediately. A short call, no more than two minutes, is all that I can tolerate without getting sick. I can’t vacuum or iron clothes. The washing machine is turned on after I go out. Other activities have to be planned down to the smallest detail. My husband has to shop for food and clothing and take care of everything else I can’t manage. Society must take its responsibility here and now! For example, home-help service from the municipality, or even better, a personal assistant.

Today, we electro-hypersensitive are more isolated than in the beginning of the 1990’s on account of these cellular phones and base stations. This means that we can no longer be out in public areas any more. Cellular phones and base stations emit microwaves, and that has a bothersome effect on me. It results in the same symptoms as with electricity.

Before, I could at least go to auctions, community center activities and so forth and visit other people. This isolation from society not only affects me but my family and friends as well. Not being able to visit friends and having to plan everything down to the smallest detail tires many people out and the family becomes even more isolated.

What kind of life is this? Is it a life? Am I always going to be so isolated? How long will my family and I manage to keep on going? What if I am abandoned, if my husband gets tired? Who will help me then? When will society take the responsibility it must? (Letter 124)

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I can also say that I loved to work, and above all I miss the social aspects with my colleagues. You become so extremely isolated. Those who have never experienced something of this sort would probably have a hard time understanding the kind of life this is. (Letter 116)

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But socially it is a bit dull because I can’t go to the other areas at work; I have to stay in my own room. I can’t go into stores or public areas. I can’t go with the kids to various sports activities. I can’t take part in school activities or parental meetings. It’s hard visiting other friends. Life as a whole has changed. In addition, you are not believed. It’s horrible. (Letter 88)

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Being so severely electro-hypersensitive is like being a hermit in an infernal hell. (Letter 281)

Life becomes extremely limited, especially since cellular telephones and mobile transmitters have become all the more common:

Why would anyone make up something like being intolerant to electricity? No one would voluntarily abstain from using a phone, going to the doctor, to movies, buying clothes, food, being able to ride in a car, bus, train, to watch TV, cook food etc., the list can go on forever.

There are *no* advantages in being electro-hypersensitive, only disadvantages. Why would someone who enjoys his life, is socially active, has a job and apartment/house and car, suddenly want to isolate himself completely? To stop going out, stop working, move out to an electricity-free cottage in the forest, not go out in sunshine, only ride a bicycle, never use the phone, watch TV and so on, if the person in question didn't suffer injury from doing such things? (Letter 66)

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I now have another apartment and can stay there sometimes, but when the neighbors watch TV etc. I have to go out. That's why I rent a small cottage where I spend a lot of time. However, it's dark there, cold and lonely, and I get tired of it. Being there is nothing but a waste of time. I drive an old diesel car without a generator and put in newly charged batteries a couple of times a week. I can't go to movies or the like, mainly on account of cellular phones, and have a hard time visiting or inviting friends home. Going to concerts, the library, museums are impossible, as is listening to music. The opportunities for me to meet people are limited. I use candles for lighting. I can't participate in any recreational activities or evening courses. I am shut off from a large portion of society and have difficulty seeing a positive future. (Letter 130)

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I can't visit other people, go to the movies, the theater, restaurants, be out among people (cellular phones) without being sick afterwards. And then sometimes so severely that I am bedridden for several days. The days that follow are a matter of staying away from ordinary society in order to build up my strength and recuperate. (Letter 155)

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It was just this past Christmas that I noticed how vulnerable you are. I also want to go into stores and buy Christmas presents, I also need to buy food without taking the risk of getting sick. How will society solve this? The simplest way would be to forbid fluorescent lamps and low-energy lamps everywhere in public areas, and that refrigerated display cases should not be placed so that you always have to stand next to them when waiting in line at the checkout. Or perhaps we should be issued some form of green card, so that we're allowed to go first in all checkout lanes everywhere?

I now feel myself to be very isolated; I would like to take some courses, I would like to retrain myself in some way so that I could work from home, perhaps part-time, something like a natural therapist or such. I would like to go out to a coffee shop with a friend, I would like to go into a changing-room and try on clothes, because I, too, need new clothes sometimes, even if the temporary disability pension doesn't allow for much. I have a bad back and it would be good for me to go do some light exercise or some weight training to keep in shape, but fluorescent lamps follow me everywhere. (Letter 117)

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On the whole, we can never do things that are completely normal and are a part of everyday life. It is very difficult to realize and accept that our lives have become so limited and isolated. To spend the rest of your life deep in a forest feels like an unjust form of punishment. (Letter 307)

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A life as an electro-hypersensitive person is hell, and even the family is affected. Cellular phones, power lines and mobile telephony masts make being even outdoors difficult. Sunlight makes you ill. Going to the drugstore or the hospital is a nightmare, but unfortunately it is necessary for me, since I have a number of other illnesses. They have a lot of fluorescent lamps turned on even if the sun is shining and there are windows. I once asked if they could turn off the lights in one corner of the waiting room at the hospital, but unfortunately they were connected in a series.

Everything that others take for granted is out of the question, such as borrowing books at the library, going into a store and trying on clothes, going to the bank etc. (Letter 291)

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Being electro-hypersensitive is a real handicap in society the way it is set-up today. I can't remain at work longer than a half-hour. I don't tolerate going into a large department store, can't sit next to a reading lamp or have any lighting near my head. I am able to watch TV if I sit far away. If I am going for a long trip in the car, I have to sit in the back seat. I am not able to spend any time near mobile telephone masts and using a cellular phone is out of the question.

Before I was afflicted with this nightmare I was full of life, without depressions or panic anxiety. Being electro-hypersensitive is to be handicapped and deprived of half your life. (Letter 287)

*

Advice and tips when you are electro-hypersensitive:

- Don't travel by car, bus, plane, subway, commuter train or inter-city train.
- Don't go to the movies, the theater, opera, concerts or the like.
- Don't stand too close to operating computers, photocopiers, freezers and refrigerated display counters, washing machines, dryers, fluorescent lamps, low-energy lamps etc.
- Don't turn on any lamps at home, unplug all electric contacts.
- Don't stand by the stove and cook food, only iron for short periods, watch TV for perhaps a half hour, and don't do it all at one time.
- Don't speak on the phone for too long. Don't use a cellular phone and don't go to places where there are people with cellular phones.

To put it simply: Keep away from everything and everybody that involves electric current or radiation.

It's living in a society in which you cannot spend any time! Is it possible? How can it be done? Where can you turn to? (Letter 254)

*

This is a horrible situation. You can't work like other people; in general you can't do anything you want to do. It's like being in jail, no watching TV, listening to the radio, going to the movies, enjoying yourself like other people. You are very isolated at home, where it's OK if the electric contacts are unplugged. You may be all right there, if you're lucky. (Letter 168)

*

I can't do things that I could a year ago, such as go to the beach, go to a market or an auction. All the cellular phones make me ill (plus the masts that are everywhere by the sides of the road, in the forests etc.)

So room for living keeps shrinking and the future evermore uncertain.

No help from any authority and no support from any individual, this is my situation. I am completely outside of this society and its privileges. I try to keep on going for the sake of my children, otherwise suicide would have been an easier way out of this hell. (Letter 69)

The electro-hypersensitive are not attractive on the labor-market and can have a hard time finding or keeping employment:

During these four years I managed to lose my job (discontinued) and tried to find a new one (but who wants to/can hire some one who can't have lamps/computers/cellular phones close by?) Sick leave? For what? Electro-hypersensitivity?

For the first time in history there has been an ad about an illness, namely electro-hypersensitivity, in order to investigate whether or not it exists. I can firmly tell you that it does! But research is necessary without industry being involved. More independent research, so that new generations can live a normal life. (Letter 215)

*

I chose to work out of the house right from the start because I was electro-hypersensitive and couldn't work in a normal work environment. At home, I could arrange my own workspace and avoid electronic electric office machines.

The whole thing began when I got a new boss and was ordered to start working at the office, which I couldn't accept due to my electro-hypersensitivity. I then received medical and union support and was therefore allowed to keep working at home for another year.

After that period of time and in connection with another new boss I was fired anyway, with reference to my electro-hypersensitivity and an alleged shortage of work. However, my position was moved to the normal environment at the office, where there was obviously no shortage of work. (Letter 407)

Being electro-hypersensitive often involves lengthy periods of sick leave, occasional unemployment, and has major financial consequences:

For me, is not a goal in itself to receive the diagnosis "electro-hypersensitivity"; I could never have dreamed that I would be afflicted by anything of the kind. It is a severe handicap, which has involved a total change in the overall content of my life. The worst thing is that I can no longer take part of professional life, with all that it involves.

One important aspect is the financial loss that the illness has caused, but which has also involved an expense for my employer/regional social insurance office. It feels particularly bitter, since one has no influence over the situation whatsoever. For many years, all of my professional tools have been power-operated, and I have been situated in the center, with the tools all around me.

On account of the fundamental deterioration of my financial situation, I have not been able to acquire housing that might be better for me. (Letter 267)

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The extra-ordinary living expenses for an afflicted person are quite large, and there are no uniform rules to guide the regional social insurance offices. Some municipalities pay compensation and others do not. A uniform code of regulations must be established. (Letter 34)

*

My economic situation is miserable. I have been in contact with the regional social insurance office, the social welfare office, the County Council, the employment office and others for help, and the only thing I can confirm is that they were all very unsympathetic! I have a student loan, but that money doesn't stretch very far and I was forced to borrow SEK 70,000 from my parents (who didn't really have that kind of money and had to take out a loan themselves) so I could buy my medicine, the acupuncture treatments, protective clothing, garden cabin and an old diesel car that has been modified to reduce the fields. (Letter 162)

*

It is impossible to make a financial estimate of what all these remedial measures have cost me. EMF-reduction of the house (did not receive the applied for allowance) cost SEK 5,000 the first time, SEK 50,000 the second time, homeopathy and acupuncture approximately SEK 25,000 each, large amounts of nutritional supplements, doctor's examinations and new clothing (could not tolerate synthetics). Add to that the social strains, such as that I was forced to move away from my husband for about five years to live in a healthy living-environment for me – he couldn't get a job in the same locality, which meant that our marriage came close to collapsing and that he, in turn, didn't take care of himself and became ill. (Letter 342)

Finally, a letter that describes a close relative's extremely limited life as an electro-hypersensitive individual in more detail:

My daughter has been electro-hypersensitive for about eight years. Her day-to-day life is very limited. She constantly has to be on guard against unseen electric and magnetic fields, which make her very ill. She gets a number of symptoms, such as inexplicable pain and tiredness, heart fluctuations and splitting headaches.

These symptoms can last quite a long time, depending upon how much she had been exposed to previously. If she can avoid contact with all electric and magnetic fields for a longer stretch of time, she can get by for shorter periods without any symptoms appearing. She feels best during the summer, when she spends most of her time in a trailer on the coast.

Why can't these afflicted persons get any help at all with their daily lives, some form of EMF-reduction so that they can at least keep on living in their homes and not have to flee out to a trailer in the forest to find the strength to survive?

The day-to-day life naturally becomes very limited; for example she can't hold an iron without her arm becoming numb and falling asleep. Holding a handheld hair-dryer causes the same symptoms, that is to say it is impossible. Holding a telephone receiver results in a prickly feeling in her hand and that her cheek and ear can become red and start to burn.

The same thing applies to daily chores, such as going to the store and buying food, clothes, carrying out errands at the bank, post office and pharmacy. These always have to be done in rapid spurts, in and quickly out again. This is because of fluorescent lamps, low-energy lamps and computers that apparently always must be used for all customer service. Why not shield this off from customers with some suitable material?

My daughter has tried to find out as much as possible about her illness since she has never been able to get any help or support from regular medical care. (She has had to contact a specialist in the field on her own in order to get any help whatsoever.)

Borrowing books from the library is almost impossible what with all the fluorescent lamps in the ceiling everywhere. On the other hand, there is a great deal of effort made when it comes to handicap adapted elevators, toilets and showers. Effort must now be made with regard to electro-hypersensitive individuals so that they also have access to society. There is no problem in replacing fluorescent lamps with ordinary ceiling lamps that take regular light bulbs, and possibly even having those shielded. This also produces good quality general light. It's possible that the regular personnel will feel much better in this sort of environment; it is important to make sure that more people do not become afflicted with electro-hypersensitivity.

My daughter now feels very isolated. Her condition has improved to the extent that she could manage to do something sometimes, maybe associate with some other people, such as in a course, singing in a choir or some easy exercise. This is not possible now, since all the rooms use fluorescent lamps and often noisy ventilation systems that make her ill. She even tried to take a course of education at the folk high-school, which she didn't think had so many fluorescent lamps, since it is so old. But she had to give up after two days. She felt so poorly after each lesson that she just couldn't continue. They had just replaced all the fixtures with fluorescent lamps and installed a ventilation system that radiated everywhere.

Going to people's houses for a visit always involves her having to ask them to turn off low-energy lamps, shut off the computer and TV and unplug all adapters to the various appliances. In addition, the new halogen lamps are not good either. This in turn causes her to avoid going out, she feels that she causes trouble, since people can become obviously irritated when they can't have things the way they want in their own homes. She also always has to ask them to turn off their cellular phones. In the end, this all leads to just giving up.

Going out with the family to eat at a restaurant or go to a café is absolutely out of the question, partly because of the fluorescent lamps, but also because most people insist upon keeping their small cellular phones turned on somewhere next to them. This leads to a major exposure for my daughter, and makes her feel quite ill. Why not have a rule against unnecessary mobile phones in public places and in public locales? Everyone should really have the same right to be there. Something as simple as being able to take a bus somewhere is quite impossible because of cellular phones. It's good for people to change environments some time. It's lucky that she has a car she can drive, but she often gets dizzy if she has to drive herself. She feels best in the backseat.

She can never take the risk of getting stuck in a queue at the food store because the line extends alongside of a refrigerated display case. In addition, there is a TV that sends commercials hung from the ceiling, and most of the other people in line have a cellular phone in their bag or jacket pocket. All of this leads to my daughter feeling very ill for several days afterwards and that sometimes she is afflicted with dizziness while still at the checkout counter. If she also has to go into several stores in a row she becomes confused and tired.

It should really be justified to think about all the cashiers who are exposed to this environment day in and day out. It may be advisable to eliminate all unnecessary electric and magnetic fields for their sakes as well, as a preventive measure.

Hearing loops in many public locations are also something my daughter reacts very strongly to. These are provided as an aid to the hearing impaired; unfortunately, the fact is that they make certain individuals quite sick. Among other things, my daughter gets very confused, suffers from anxiety and a feeling of panic. Therefore it is always difficult to go to churches, theaters, concerts, movies etc.

This is just a small contribution to your research that I hope will have the effect of helping the electro-hypersensitive get the chance to receive help and understanding. (Letter 38)

Healthcare Institutions

I would like to have low emission rooms set-up at the hospital where those of us who are electro-hypersensitive can be treated when necessary.

When my daughter was born I had a trailer parked outside of the maternity ward, was brought in by wheelchair when it was time to give birth, delivered her in a room with all the fuses unplugged, and then back out into the trailer again. Four hours after the delivery we went home. (Letter 36)

Few hospitals have rooms that have low levels of electric and magnetic fields. Therefore many people with severe electro-hypersensitivity worry over the prospect of needing hospital care:

One anxiety I share with many other electro-hypersensitive individuals is what would happen if I were to have an accident or get a serious illness that required hospital care. As far as I know, there is not one single hospital that has an emergency room or ward that has been rebuilt as to reduce the fields. You would probably get much sicker after a few hours there, than before you came in. Nor is it easy to find health services conducted at home in today's society. (Letter 352)

*

Something else that bothers most electro-hypersensitive individuals is the question: What happens if you become acutely ill? An open question! They are so sensitive, so who knows what will happen to them if they are admitted to a hospital? Nor is it easy to get regular doctors to make house calls, so it can be difficult for them to have any contact whatsoever with healthcare. The district nurse can make house calls.

Even if things are moving in the right direction, it is still often the case that doctors don't really believe these patients. (Statement 30)

*

Even though we electro-hypersensitive are a growing group and have been so for a long period of time, we can't always seek help when, for example, we need an operation, because there are no operating theaters or examination rooms at any of the hospitals in our country that has gone through EMF-reduction, so healthcare on equal terms does not exist for us. (Letter 193)

*

Healthcare has fallen behind with regard to knowledge about electro-hypersensitivity. It is not unusual for the electro-hypersensitive to be subjected to negative reactions. Many researchers/doctors banish electro-hypersensitivity to the medical backdoor of "psychological" instead of accepting a biological explanatory model. At present, only six localities have treatment and waiting rooms that has had EMF-reduction. This causes a great deal of anxiety among the electro-hypersensitive, since today it is difficult to get care or treatment without aggravating the electro-hypersensitive symptoms. In the same way, there are many who are denied hospital-associated home healthcare in their own homes that has been modified to get low EMF. (Letter 147)

*

I am very worried about my future. What will happen if I become severely ill and need hospital care? There are no hospital rooms with low levels of EMF in the municipality where I live. (Letter 398)

*

Getting treatment from healthcare personnel is very difficult, at times impossible. I have no idea what will happen to me if I need emergency care, an operation or other treatment at the hospital. Do they want to help me, and can they? (Letter 246)

*

But – what happens if I get sick? If someone has to take care of me? You can only hope for a quick death when that day comes. (Letter 231)

*

I was already retired when I became electro-hypersensitive, so I was spared problems in my professional life. Instead, I now have to worry about what will happen when I can no longer remain in my house that has had EMF-reduction. Alarms and hearing aids, for example, are hardly things that an electro-hypersensitive person can make use of. An low-EMF home for the aged doesn't exist, and my worst fear is having to be hospitalized for some illness. Just a few hours in such a facility results in major discomfort in the form of heat and numbness in my face, headaches, muscle aches and heart palpitations. (Letter 297)

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Despite everything, this isn't the hardest thing. The hardest thing is fear. The fear I feel over what we would do if my mother were to become seriously ill and had to be hospitalized. When my mother was afflicted with breast cancer a few years ago, she came home the same day she had her operation without the chance of receiving post-operative care. People showed great understanding and consideration over her having lost one of her breasts. What they can't understand is that compared to suffering from electro-hypersensitivity, a breast doesn't matter all that much. (Letter 142)

A few letter writers tell about how a hospital stay resulted in severe symptoms from their electro-hypersensitivity.

After an appendicitis attack (operation) between Christmas and New Year, I became very sick once more. There were no rooms with low EMF-emissions. The cough returned, as did all the old symptoms, such as heart problems and pain in my entire body. The cough kept me awake at night. I lay there for two days. The day after I came home I began to run a fever and had to go back for additional examinations. I had to sit under fluorescent lamps that couldn't be turned off because then the entire emergency ward would be plunged into darkness. (Letter 412)

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Last summer I needed an operation that I had been waiting quite some time for, and was to remain at the hospital for at least four days. The operation went well, but after a day and a half my husband had to come and get me in the middle of the night and drive me out to the cabin, one hundred and ten kilometers away. He also had to take time off to help me. Getting over the electric fields took several days. They didn't have any kind of electrically shielded room, which was very trying.

I have just returned from an appointment at the optometrist's to try some new reading glasses and now sit here once again with a headache, burning face, smarting eyes etc. (Letter 177)

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I had an operation two months ago. When I woke up from the anesthesia, the finger clip monitoring my EKG had been moved from my right forefinger to the left, where I have a nerve injury. The nerve burned like fire up to my elbow before I became aware of what had happened and, in my confused state, could call for help to have it moved. It could very well have lead to another severe injury because healthcare has no knowledge of electro-hypersensitivity whatsoever and therefore neglects the problem. (Letter 283)

It is common to be met with a lack of understanding from healthcare or insufficient knowledge about how to care for electro-hypersensitive patients:

The worst thing is the knowledge that the hospital does not want to lower the field exposure in even one operating room, one treatment room, or a room at the emergency ward. I am waiting for an operation and don't know if it can be carried out. We electro-hypersensitive have the right to the same hospital care as other patients; we have paid taxes for it over many years. (Letter 294)

*

I came down with a brain virus during the spring of 1998 and was totally paralyzed for eight weeks. No doctor came to my home; instead they all referred me to the emergency ward at the hospital. I can't survive in that environment. So all I could do was to hope that I would survive at my sister's, where I had collapsed. The doctor has called me in for an examination of my heart, thyroid glands etc., but I can't go there, and today doctors don't pay house calls, that regulation was taken away many years ago. (Letter 260)

*

The undersigned has been suffering from severe electro-hypersensitivity for the past eight years, but during those years, I have also been in need of medical care for many other illnesses. It is therefore surprising that the hospital in my area of the municipality consistently refuses to have a treatment room prepared to lower the electric and magnetic fields, and thereby making hospital care impossible. The motivation behind their point of view is obviously the National Board of Health and Welfare's opinion that it has not been scientifically proven that electric fields make people sick.

It is also surprising that, when talking with doctors, they know so little about the influences of electricity, while engineers have a complete understanding over the effects an electric field can have on a person. If you can disrupt an entire computer central by standing outside of the building directing an electric field towards the central, then common sense tells you that even a person's comparably "little electric system" can be affected. (Letter 279)

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At present, I am in the process of trying to convince our county hospital to perform EMF-reduction in a treatment room. [Currently] I cannot go to the hospital if/when the need arises.

The County Council has adopted a handicap policy program that among other things states, "The County Council's buildings and premises are to be made even more accessible, adapted and equipped for persons with functional impairments". But nothing has happened so far for those who are functionally impaired due to electro-hypersensitivity. (Letter 159)

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Since my research depends upon the way [my] electro-hypersensitivity develops, I turned to the "Centrum för miljöbelastning" (Center for Environmental Strain) at Huddinge University Hospital, now located at the Karolinska Institute, since they were supposed to be experts in electro-hypersensitivity. I was met by facilities that had had no EMF-reduction, not even at the most basic level. I couldn't sit across from the doctor at the big desk because there was a lamp with a transformer and a power ramp where I was sitting. The message to me was crystal clear: We don't believe that electro-hypersensitivity exists. You are not credible. My feelings were of course likewise. I didn't think that they were credible, either.

That visit did not produce any tangible assistance; it left instead a feeling of frustration. When I later read my journal I became very upset over the way my problems were described, so I demanded that corrections be made, and this has also been done. (Statement 18)

*

As I write this, my wife is still sitting in a pitch-black room with physical symptoms of several illnesses, each of which would normally require hospital care on its own. According to the Health and Medical Services Act, all Swedish citizens have the right to adequate health-care. This does not seem to apply to persons who find themselves in this situation; it seems as if they can be treated as capriciously as one chooses or, in the worst case, not treat them at all, even though some of them suffer from very serious and even life-threatening conditions.

And so my wife is sitting completely isolated with a bleeding intestine, a lump in one breast that has not been examined and, at times, severe coronary spasms that require morphine to relieve.

Her doctor has reported her case to the National Board of Health and Welfare in the hope of trying to get a room set-up at the hospital where she can at least be able to undergo an examination. The National Board of Health and Welfare's reply can be summarized as follows: Since there is no scientific proof that our electric environment can be hazardous to one's health, the National Board of Health and Welfare cannot require County Councils and public health boards to perform EMF-reduction of rooms at our hospitals. Consequently, they don't care about the fact that thousands of people all relate pretty much the same things about their problems. (Statement 32)

*

I have an injury to the meniscus in one knee and it should be removed. Throughout the years I have learned how to take care of a lot of things on my own, but this I cannot do.

What I am trying to say by this is that a major problem for those of us with electro-hypersensitivity is that we can't even seek and receive medical care when we need it without being subjected to electricity, which causes severe problems. This has to be solved - quickly! (Statement 1)

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It was a catastrophe when I realized that the doctors had no knowledge whatsoever in this field. Now, when I was the sickest I had ever been in my life, I couldn't get any help. I wasn't made fun of, as I've heard others have been, but I was all on my own with my problems. Nor was I able to seek help at the hospital, since I couldn't go there because of the harmful electric environment. I couldn't even be in my own home, not be at work, not go anywhere else either without becoming even sicker. This is probably one of the worst things that can afflict a person. (Letter 244)

But there are also those with electro-hypersensitivity who have been met with understanding and for whom healthcare personnel did what they could to avoid as much stress as possible during a hospital stay:

In December 1999, I was admitted to the emergency ward at the hospital for a suspected heart attack. After a few hours in the ward, I became ill due to the electric environment. The personnel showed a great deal of understanding, but unfortunately, there was no room with low levels of EMF on hand. An improvement was made by turning the bed so that the head of the bed poked out into the middle of the floor, further away from all the cables in the wall. The doctor was forced to discharge me after 24-hours, even though he would have preferred to keep me under observation for another day. (Letter 395)

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Of course my wife can be afflicted with other illnesses, which also occurred a few years ago. She suffered from gallstones for two years. Finally, she could neither eat nor use the bathroom without an enema. With the assistance of the patient ombudsman, numerous telephone calls and visits to the hospital for measurements, it took her about a year to use of her body in order to feel if the environment was OK before the operation could be carried out. During her first visit, she suffered from cramps due to the high magnetic field and newly painted premises. She was forced to leave the hospital. The operation could be carried out one year later thanks to an understanding doctor, who saw to it that she was placed in a hospital room without new paint and without magnetic and electric fields.

Just the fact that there is not one single hospital in Stockholm that is adapted to those with this problem is outrageous! I thought that everyone in our democratic society had the right to receive adequate medical care! (Statement 16)

Information to healthcare personnel, low-emission premises in healthcare and house calls by healthcare personnel are factors desired by the electro-hypersensitive so that they can get help when they become ill, just like those who are not electro-hypersensitive:

If the first symptoms of flushed, red cheeks, had been taken seriously by the doctor I had at the time, I would be healthy today and fit for work. And I wouldn't be a burden to society with sick leave and a disability pension. Nor would I have to sit in my house 21-22 hours a day.

Healthcare must take the first symptoms of electro-hypersensitivity seriously. It is important that the National Board of Health and Welfare provide information to healthcare centers and hospitals so that more persons are not afflicted. If one stops exposing oneself to electromagnetic fields when the first symptoms begin to appear, it usually leads to recovery. If you keep on working somewhere that makes you ill, as in my case, the injury becomes greater and more difficult to correct.

I demand better healthcare in the home for those afflicted and a better reception at hospitals/healthcare centers. There should be a building with low levels of electric and magnetic fields in which we can be treated. There should be an action plan for hospital personnel. What happens if I become acutely ill? I wouldn't be able to stay at a hospital or ride in an ambulance due to all the electrical apparatus. (Letter 124)

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There is a special situation prevalent within the healthcare apparatus because the medical profession as a whole has inadequate knowledge about electro-hypersensitivity and EM fields in general. It is not often that this illness can be successfully treated by textbook methods, which often lead to a psychological diagnosis for no valid reason. Instead, the patient must seek information about his illness through such means as contacting patient organizations and reading research articles and other material insofar as they are capable of doing so. This can lead to the patient being in possession of special knowledge that the doctor lacks, which in adverse cases results in an even poorer reception.

Another problem is that it can be impossible for a person with severe electro-hypersensitivity to get healthcare (not necessarily for something that has to do with electro-hypersensitivity) without their condition drastically deteriorating due to the EM environment. The opportunity for house calls should be provided, and where this is not possible then at least those apparatus that are not absolutely necessary for examination/treatment (such as simple things like fluorescent lamps in the ceiling) should be turned off and time spent in waiting rooms reduced. On the whole, there is a need for an information campaign aimed at those employed in healthcare in general and specifically towards doctors, preferably as a part of their training. (Letter 58)

Research

Most of the phenomenon in the world existed well before science as we know it today ever came about. Scientific evidence has nothing to do with a phenomenon's existence; rather, there is a chance it can shed some light on it and, at best, provide an explanation. (Letter 386)

In this chapter, letters are presented in which the writers express their opinions of the research pertaining to electro-hypersensitivity along with their own suggestions as to how this should be organized in order to make progress. References are also made to Swedish and foreign research supportive of the hypothesis that electromagnetic fields can have a negative effect on health.

A large number of letters express explicit criticism over the way in which research on electro-hypersensitivity is being conducted:

When I became sick in '88, I thought at first that research would quickly solve the problem with electro-hypersensitivity. But as time went on, I understood that researchers and the authorities weren't interested in looking for the truth; instead they concentrated their resources on trying to show that the problem is psychological.

Electricity, metals and certain chemicals seem to amplify the symptoms for many of us suffering from electro-hypersensitivity. Trying to find a connection should be of interest, but nothing is being done as long as they "know" that there is no physical cause. Instead, a new term called techno-stress was coined, and this was presumed to explain the occurrence of "stress symptoms" that had never emerged with other kinds of stress before.

I have been following the research and the discussion for close to 12 years and am very surprised by the unscientific methods employed. They presume to know the cause of the problem and usually manage to interpret all the results so that they (or their client?) are satisfied. Recently, a study was published by the Clinic of Occupational and Environmental Medicine in Lund with the conclusion that persons suffering from electro-hypersensitivity who have continued working have a much better prognosis than those who have gone on sick leave. The study provides no answer as to whether this could be due to the fact that the problems of those who continued working may not have been so severe.

This kind of pseudo-research is still being conducted after all these years. A similar study dealing with persons suffering from cancer would almost certainly produce the same result. A less favorable prognosis for those who take sick leave more often probably applies to most illnesses. There is an abundance of research pertaining to electro-hypersensitivity in which peculiar conclusions have been drawn. When it became apparent that those working with computers for longer periods of time had more problems, the assumption was that the reason they worked with the computer so much was because they were exposed to stress and it was the stress that caused the problem.

Why is such strange logic used in this particular issue and why do the authorities refer to such research? Why is money thrown away on nonsensical research? There seems to be formidable resistance against the truth coming out. Who stands to gain from an increase in people's sufferings and the cost to society? (Letter 103)

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There is enough evidence to show that radiation from such things as mobile telephone transmitters are hazardous to people. Why not listen to those with severe electro-hypersensitivity, who are more sensitive than the measuring instruments used to determine what man can tolerate when it comes to various kinds of radiation? Everyone knows that technology can knock out technology. Then why not admit that it can even knock out man?

I protest against research in which those in charge expose an electro-hypersensitive individual to various types of insignificant tests and then make statements in the mass media to the effect that electro-hypersensitivity is hysteria and can be de-conditioned. These kinds of statements have been detrimental to those of us who are electro-hypersensitive, and my husband and I have had to start all over again with politicians, doctors etc. to get respect for my illness on account of these "prophesies". We electro-hypersensitive need help and care just like other people with illnesses, and don't see primarily psychological causes for electro-hypersensitivity. Everyone knows that the body and soul are united, but does a patient with a heart ailment, for example, have to go through the same procedures that an electro-hypersensitive patient is forced to go through? (Letter 273)

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Those who question the health effects of mobile telephony consistently overlook the significance of the fact that the *radiation is pulsed*. They say that the average radiation level is low, but relatively strong pulses are more dangerous than a relatively low continuous radiation, in the same way that flickering light has proven to be harmful.

Quantitative case studies is an important scientific method, it is used with good result in a variety of different contexts. Why is it not used in this field? There are a number of very illustrative case studies in which examples are shown of how reactions have come about without the subject being aware of having been exposed. There are numerous examples of this. Every electro-hypersensitive individual has experienced these kinds of unconscious provocation studies.

One very obvious case was how all the members of a family became sick after moving into a new apartment, although the husband's condition was the most severe. Eventually the newspapers wrote about it, and then it came out that a mobile telephone transmitter was situated on their outer wall. The radiation level in the apartment was very close to the allowed limit⁴⁰ – there is no official limit set by an authority as a form of a regulation, but there is a recommendation. This applies to temporary exposure and thermal effects. The level in the interior of the apartment was at about that intensity. There is no allowed limit whatsoever for continuous exposure.

After a while, the husband in the family could locate mobile telephone transmitters with his eyes shut, even those he had no prior knowledge of; this is well documented in the newspapers. His condition has now further deteriorated and he cannot be outdoors without a protective suit⁴¹. One conclusion that can be drawn is that the level of radiation necessary to make him sick today is so low that it cannot be a question of thermal effects. Consequently, the limit for thermal effects is of no interest when it comes to evaluating the health effects of mobile telephone transmitters and the like. (Statement 22)

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"We don't know if electro-hypersensitivity exists..."

" We don't know if the fields from cellular phones are dangerous or not..."

" We don't know... We don't know... We don't know..."

These are words one reads and hears time and again, when it comes to the biological effects of various electric and magnetic fields, frequencies and strengths. Who, then, are all of those "we who do not know"? Briefly and somewhat oversimplified my answer would be: The group of individuals blocking progress among researchers, people in positions of power, all kinds of experts and representatives for such groups as the financial interests within the IT world! Unfortunately, they are often very influential opinion makers.

But there is an *even larger* group of people who have opinions about these issues! This group is made up of all of us, all over the world, who can actually *feel* the influence of electric and magnetic fields in our bodies. For many of us, this has affected every aspect of our lives.

There are women, men, youths and children in our group. Many of us are highly educated. Among us are people with "first-rate" degrees, electronics experts at the forefront of research, engineers with many years experience with radar, radio transmitters, high-frequency apparatus, mobile telephony, computers, transformers, distribution plants and high-frequency transmissions. There are people here from practically all professions and businesses.

⁴⁰ 4.5W/m² at 900 MHz

⁴¹ An American Holaday RF protection suit.

There are *many* of us who know! There are many of us who can describe how our bodies react to electric and magnetic fields. There are many of us who can state with complete confidence that The National Institute of Radiation Protection's threshold values for field strengths is still set much too high. There are many of us who, through our bodies, have been able to establish that people *can* be strongly affected even at levels far below the limits set for heating tissue.

The threshold values provided by The National Institute of Radiation Protection [SSI] and others with regard to heating body tissue are undoubtedly correct, but note well that the values only apply to *heating*! Researchers in different countries have proven time and again that the central nervous system can also be affected by fields that are a great deal weaker than fields that produce thermal effects. There are many of us who can certify the correctness of this, based upon the reactions of our bodies. Olle Johansson⁴² has access to research reports from many countries. I encourage you to listen to him in all seriousness. (Letter 22)

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Sture Lidén⁴³ succeeded in getting Dagens Nyheter⁴⁴ to write that a large number of Telia employees had been cured of their electro-hypersensitivity through discussion alone. I have a list of actions that Telia sent to their safety engineers during that period of time. It included reducing magnetic fields, replacing monitor screens, replacing lighting etc.

It has also been stated that psychologist Harlacher has cured electro-hypersensitivity. In 1996, Harlacher showed me a screen exhibition regarding his treatment of electro-hypersensitive using cognitive therapy over two years. The patients had come from a skin clinic. Out of 26, 14 were classified as cured. I asked him to describe the current situation for a specific, cured patient. He referred to a woman who had been on sick leave but had returned to work. And the skin condition, had it cleared up? No, but she wasn't electro-hypersensitive. The skin condition could be caused by something like mold in the air humidifier, Harlacher added. She was cured because she no longer believed that the condition was caused by the electromagnetic fields at her work.

Consequently, the patient had abandoned her own opinion as to the cause, based upon her own experience that also has the support of scientific studies, in favor of the psychologist's opinion, which is neither based upon experience nor science.

We don't usually tolerate that kind of treatment in a democratic society. It is, in fact, nothing less than brainwashing.

There are still psychologists who have the same attitude to their patients as Harlacher, including those at the Karolinska Institute. Patients there are told that neither fields nor mercury from amalgam are harmful; instead, the condition is caused by depression and can be treated with psychopharmacologic drugs and cognitive therapy.

Therefore, I maintain that doctors and hospital directors should be held responsible for this sorry state of affairs – as well as those regional social insurance offices that pay around SEK 25,000 for an investigation that includes a psychologist with this sort of attitude.

Back to research results and their reports. Take, for example, the provocation study in Linköping. In the report, it states, "the conclusion of this investigation is that the exposure to electric or magnetic fields that was carried out was not sufficient to cause for the problems experienced by the electro-hypersensitive." Does the conclusion apply to those electro-hypersensitive individuals who participated in the test, or is the intention such that the result can be transferred to all those suffering from electro-hypersensitivity? Ulf Flodin⁴⁵ told Radio Östergötland that there is no direct connection between electromagnetic fields and the patients' conditions.

As I see it, the only real conclusion that can be drawn from the test is that the exposure was insufficient for those particular test persons, within the set amount of time (one hour), to develop such clear symptoms that one could state beyond a doubt that they had been exposed. Persons who had stated that they are sensitive to computers and TV sets were not exposed to those types of fields, with high peaks, that computers and TVs normally have. In addition, there were no flickering lights, which must have further extended the physical process.

⁴² Neuroscientist, associated professor at the Karolinska Institute.

⁴³ A professor who refused to accept EHS and suggested that the media created the illness, now deceased.

⁴⁴ Sweden's largest morning paper.

⁴⁵ A medical doctor.

The result in the report that should really be pointed out is: "The observer made personal observations and on occasion reported such things as redness of the skin, slurred speech or unsteadiness after having been exposed. In any case, the test subjects were not always aware of this and could say that the apparatus was turned off."

Accordingly, the hidden apparatus is turned on, the test subject is affected but is himself unaware of it. Now that we know that this may be the case, I think it's time to stop putting the electro-hypersensitive on trial. To demand that they themselves indicate when the processes in their bodies begin is something that would never be required of other people suffering from other illnesses, such as allergies.

Since the nervous system is involved, it is even more important that researchers design tests that electro-hypersensitive individuals have complete confidence in. For example, test subjects should not feel that regional social insurance office's doctors are overly eager to get hold of the result and use it against them in the form of the termination of sickness benefits, as is the case at present – something that should encourage researchers not to draw unsubstantiated conclusions and go to the media with them.

Certain factors that are of obvious importance have not been investigated. We know that an electro-hypersensitive individual's condition deteriorates during the removal of amalgam, but if the removal was conducted properly the majority recover once the metal has been removed. And we know that a fairly large group has problems with their thyroid glands. There is a connection with mercury that must be investigated in a serious manner. Not with urine specimens and antiquated threshold values, but with tests that display accumulations of heavy metals in the body. We must also have broad documentation of other exposures, such as epoxy, photography solvents etc., that have been present in the afflicted individual's environment prior to the outbreak of electro-hypersensitivity. Testing flickering and sound sensitivity among those with amalgam injuries who *do not* suffer from electro-hypersensitivity can be interesting for comparison with the results of the electro-hypersensitive.

There are a number of families in which both parents and a child are electro-hypersensitive, or even two siblings. Is this because they have been living in the same environment? That the child as early as during the fetal stage and during breastfeeding has absorbed its share of the toxins in its mother's body? Are there real hereditary factors? In that case, what do they consist of? In an inferior detoxication ability? In a hereditary sensitivity towards certain chemical substances? Or a congenital hyperactive nervous system?

There are many tracks for toxicologists, neurologists and immunologists to follow that can lead to treatment for electro-hypersensitivity based upon the evidence. And that, I hope, is the goal, both for research and medical care. (Statement 4)

There are suspicions that not all research is unbiased:

I am surprised that doctors and researchers have not gotten any further with the question of electro-hypersensitivity. I have only taken 20 points worth of medical studies and have realized that there is quite a bit wrong with a person's physiology when they are afflicted with electro-hypersensitivity. Can it be that we don't dare see the truth? Are we inconvenient from a financial point of view? Unfortunately, it rebounds back on us. We will soon have a society in which no one is healthy. (Letter 244)

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A lot of independent research that is not controlled by financial interests is necessary. The controversial researchers can be those who are working on new solutions and approaches. These researchers need support instead of being counteracted. (Letter 306)

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We need expert help, and research needs to be intensified. A lot of the research projects, including a number of provocation trials, are pre-determined to show that the cause of electro-hypersensitivity lies on the physical plane. There are not enough unbiased research projects, and I believe in interdisciplinary research, i.e. where experts from many different fields cooperate. The environment has a negative effect on us – including chemicals, microwaves, radio waves and electromagnetic fields, as well as construction materials, ventilation etc. (Letter 259)

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For anyone who has spent years following how an electro-hypersensitive individual reacts to electricity, it is a mystery that researchers aren't interested in finding a connection.

Unintentional provocations take place in every family in which a member is electro-hypersensitive. The symptoms always have an electricity-related cause. Reactions arise even during sleep.

The provocation experiments that have been conducted show that a lack of confidence exists between researchers and patients. And there within lies a breeding ground for unsuccessful experiments. One only needs to browse through a number of research applications to discover that the researchers cast suspicions over the electro-hypersensitive before the project has even begun. (Letter 324)

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I participated in a provocation study conducted by the Arbetsmiljöinstitutet (The National Institute for Occupational Health) in Solna. After 40 minutes at an apparatus in an inferior test environment, my body's defense system broke down again, and this time the effects were even more serious. Among other things, it triggered an allergic reaction towards the plastic material in my teeth and for many years after, I suffered from symptoms similar to Alzheimer's.

The provocation tests were to be conducted on two separate occasions. Many of us who participated in the first test became so sick that when the time came for the second test, we couldn't take part. The project leader did not report this situation, which resulted in an incorrect picture of the test results. (Letter 251)

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No, it's not research and evidence that is lacking, it's civil courage. You could lose your jobs. Doesn't it feel insincere and dishonest to have a position – to work for something where you produce evidence that was requested by the market and the government right from the start?

In order for the parliament and the government to become aware of the reality we live in, I have a suggestion for you researchers. Take a video camera and step into the reality of those who are the worst afflicted. Let them describe how they solve their housing situations and how they are forced to live. Most of them are so ill they are unable to come here to tell their story. Then allow members of the parliament to view the video, just as they did with the issue of pornography, since it was only after that that they understood the seriousness of the situation, even though it had existed in progressively cruder forms for many years. One could then hope that they would also get involved in the lives and the reality of the electro-hypersensitive via a video.

There aren't any words to describe the negligence with which this so-called research has been conducted. A lot has already been done – otherwise how would those afflicted have managed to survive?

There are buildings that have gone through EMF-reduction throughout our country. We can conduct research there. Take the Air Force's F 7-base for example; even before 1993, a building was constructed for personnel with chemical allergies and electro-hypersensitivity. Those two ailments seem to attract one another. (Letter 46)

In particular, criticism has been directed against the provocation studies conducted on the electro-hypersensitive:

It has been stated that provocation trials don't prove anything. But we don't work like light bulbs, there is something known as a delay. And one must also take the entire environment into consideration.

What is it that they are really exposing us to when we participate as test subjects? Something that they believe we will react to. If we don't, we are hypochondriacs. No one stops to consider that we may have been exposed to the *wrong* provocation. Instead, I think we should examine those of us afflicted from a biological perspective. Do we share a common denominator?

In medical research, banana flies or laboratory mice as a rule are used for experiments on living material once the cell studies have been finished, with almost no exceptions. When a reaction, positive or negative, has been produced in the mice or banana flies, the results are translated over to reactions in people. But when it comes to reactions to electricity, magnetic fields and the affects of microwaves and transmitter masts, it doesn't matter how many mice develop cellular changes or other reactions. How inconsistent can you be?

Three professors, Persson, Salford and Brun in Lund, exposed rats for radiation from cellular phones. These microwaves damage the blood-brain barrier and leakage occurs, which cause stains on the brain and kills brain cells, which can possibly lead to Alzheimer's. (Statement 14)

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Electro-hypersensitive individuals are entrusted to hold positions within companies and the government. Their testimony from the observation of a split second can determine a decision of guilty or innocent at a trial. But when their daily observations relating to the effects of electricity, verified by measuring instruments, are brought up, they are questioned. The reason for this is that researchers have failed to describe their observations.

It is frustrating to see the practical evidence daily, and at the same time hear and read about all the failed so-called provocation experiments, which were also promoted quite actively in the media. What other research field promotes failed experiments?

Short provocation experiments, usually lasting about an hour, are not a normal situation. Instead, the test subject is put into an extremely competitive situation, since confidence in him is questioned. Now he has something to prove! Certain individuals feel pressure in that they represent an entire group of sick people. One must not fail! There are two extremes when it comes to reacting to unexpected competitive pressure. Some react with an adrenaline kick that make them insensitive, while others collapse and "react to everything".

Adrenaline raises the sensitivity threshold; this is generally accepted. Those who "feel everything" due to nervousness - how are they to sort out these symptoms from symptoms related to electricity? In addition, it is generally accepted that symptoms are accentuated under stress.

If a skilled lecturer were to open an empty bottle, but say that it has a strong odor, some members of the audience will sense that odor. A person who is allergic to flowers can get an attack when he sees plastic flowers. These examples illustrate that our senses can be fooled, which is a normal human "fault"! But no serious researcher would exploit this human "fault" by alternately displaying real flowers and placebo flowers in order to prove that allergies to flowers do not exist.

Yet this method is practiced by electricity researchers. Indeed, at those points when the electricity is turned off, which normally occurs in about 50 percent of the provocations, a situation similar to that of the plastic flowers is produced.

An overly-explicit example: If a person who is allergic to flowers reacts to plastic flowers, he is considered normal; if in addition he is electro-hypersensitive and reacts to placebo electricity, he would be classified as a suffering from an imaginary illness. Where is the logic in that?

Finally, take this question from reality with you: Who do you think discovered faulty EMF-reduction, the contractor, the employer or the electro-hypersensitive individual? (Letter 90)

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And so I would like to finish by stating that my experience with electro-hypersensitivity is similar to pouring water into a bowl. If you pour in too much, it overflows. Or that someone who is sensitive to horses can pet a horse, but maybe not be able to work in a stable. This is probably one explanation as to why provocation studies are of limited value. It is not a question of turning something on or off. If I have been exposed to fluorescent lighting or a computer environment for an extended period I get sick; sometimes I can tolerate more, sometimes less. That's just the way it is. (Letter 146)

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There are many of us electro-hypersensitive individuals that have already waited much too long for the help we really should have received a long time ago. Note that no research dealing with electro-hypersensitivity will succeed as long as there is the belief that an electro-hypersensitive person can time and again determine if a TV or a cellular phone, for example, is on when it is turned on or off during brief intervals. For the most part, the reaction comes afterwards. In addition, a combination effect of EMF and other exposures can be confusing. (Letter 202)

This is the way a couple of electro-hypersensitive persons describe how the reaction is delayed:

What has confused me is that there has been an attempt made at measuring reactions during direct exposure in a number of reported tests. In my case the symptoms aren't always manifested immediately, and above all they are visible in my face long before I myself sense them. Consequently, my conclusion is that the measuring should be done in a different manner and above all for a longer period of time.

If, for example, one were to make a comparison with someone who is allergic to certain foods, this is not something that the afflicted person can confirm at the moment of exposure either. (Letter 384)

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It began on a Monday evening. I came to the course classroom, which was full of computers, all of which were situated on the table in front of us. I wasn't aware of any problems whatsoever while I was there, but on Tuesday afternoon I was very tired, and during the night, at about two a.m., I woke up and had a terrible headache. An unusual kind of headache. It felt as if something in my head was just not functioning properly. It felt almost like a cramp in a leg. The headache lasted all Wednesday.

The exact same thing occurred the following week after the course, at the same times. And then a good friend happened to need some help with his computer on Friday. The headache had been gone since Thursday, so I agreed. It was only to take a short while. It took longer than expected and my headache came right on schedule Saturday night and had just about gone over when I went to the course on Monday. The whole pattern was now repeated, with the exception that the headache lasted for two days instead of one. I stopped going to the course. (Letter 19)

The following letter writer provides suggestions as to how provocation tests should be conducted:

I get a feeling of total frustration when I am confronted time after time, via radio and the press, with the announcement that some investigation or study has concluded that there is no connection between exposure to electromagnetic fields and feelings of discomfort for the so-called electro-hypersensitive. I am completely convinced that these results do *not* depend upon a lack of connection, since I personally experience this connection daily. Below, I would like to point out a few issues that were not considered at all, or in any case, not sufficiently, in connection with the provocation trials conducted and that I am aware of.

The selection of the so-called electro-hypersensitive subjects: They should go through a "non-scientific" provocation test prior to the "scientific test", so that only those who display a "significant level of electro-hypersensitivity" are included.

The status of those participating: Those who participate must be "reset" before the test begins. This could mean that they spend a number of days prior to the test in a low emission environment.

Radiation sources during the test: A number of sources should be used in parallel here. At the very least cathode ray tubes, pulsed radio frequencies (equivalent to GSM telephones) and even powerful sinus-shaped 50 Hz fields should definitely be included.

Exposure time during the test: Each test should last at least a few hours.

Time for evaluation: After the test, the participants should immediately be returned to a low emission environment. Afterwards, they should have an adequate amount of time to evaluate the test. For some, a few hours will undoubtedly be required.

Recovery between test occasions: If additional provocation tests are to be conducted (test series), there must be some recovery time between the tests. This time can be expected to extend over several days. (Letter 152)

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I am very frustrated that greater carefulness was not applied in a number of studies that, as I see it, is necessary for a blind test of the electro-hypersensitive to be successful:

- Good electric environment in the test area is important. This must be determined by the electro-hypersensitive test subjects. Even if the measuring instruments measure high frequencies (most often up to 1.2 or 1.8 GHz), there is a wide spectrum of frequencies outside of that range of radiation, that everyone can perceive (heat radiation, approx. 300 GHz).
- It is also important to make sure that the test subjects are suitable for the planned test. This can only be done by allowing them to test and approve the procedure. It doesn't seem to be widely known that there are different degrees of electro-hypersensitivity and that to a certain extent we react to different fields and at different rates of speed. I base this conclusion on an announcement presented in January that it is not beneficial to place electro-hypersensitive individuals on sick leave, since the prognosis for those on sick leave is worse than for those who are not on sick leave. Of course, those who need to be placed on sick leave are more electro-hypersensitive than those who are not on sick leave.
- Test subjects must be allowed to practice in order to know how they react to the test object in the exact form that will be used in the test. Since there is evidence that we also react to flickering light, it could be that without it, the reaction for many will be less dynamic and that it isn't one [reaction] they recognize to, say, a computer.

To anyone who assumes that electro-hypersensitive individuals are not affected by electricity, my thoughts must seem unreasonable; a real test could never be conducted. However, Dr. William Rea, Dallas succeeded with this.

It would be valuable if the comments of the test subjects were taken into consideration when evaluating completed studies. Test subjects have called attention to a poor electric environment in the test area in several cases. The result then cannot be anything other than misleading. In tests where the electro-hypersensitive person doesn't answer better than the odds of chance, the normal interpretation is that they aren't affected by electricity. I would rather that they also consider a possible interpretation that the procedure was not optimal, for example, they can have reacted to peripheral equipment. (Letter 130)

Engineers who are themselves electro-hypersensitive or have an electro-hypersensitive person in their immediate surroundings have explained in great detail how complicated it is to determine which electromagnetic fields cause the greatest problems. This could be an explanation as to why so many provocation tests fail:

I have titled my statement, "Solution to the problem remote with measuring methods of today". I am a safety engineer and have conducted many measurements at many different places. We acquired a Holaday EM field meter for our headquarters at an early stage after consultation with Kjell Hansson Mild.

I am also electro-hypersensitive, and became so without having worked with computers and without having a fixed workplace. A safety engineer is naturally constantly out in the field. My electro-hypersensitivity came during one week in connection with dental treatment, during which I was overexposed to copper from a corroded brass post in a tooth. My hair also turned blue at the same time, that's how powerful it was.

To conduct measurements and at the same time be electro-hypersensitive has given me an insight that not many have. It often happens that I am out and feel a poor electric environment with my body at workplaces where there have been complaints, even though my measuring instruments don't produce any indications. Then I realize that what we register with our instruments is not what we feel. This applies to the Holaday instrument, as well as to large, expensive instruments like Radians Innova.

Do you understand what that means? If we can't detect any fields then there is no electro-hypersensitivity! That's why it is very important to use the measuring instruments properly. As long as we only have this method of measuring and believe that high milliTesla values can cause the illness but not low ones, we will never solve the problem of electro-hypersensitivity. By means of a few examples, I would like to demonstrate what is meant by high and low measured values:

If someone were to ask me if I wanted to work eight hours at a smelting plant with huge electric furnaces, or two hours at our headquarters' temporary office, I would choose the smelting plant without hesitation, since I would feel less sick there and my recovery would be much quicker. I have experience from both of them. There are 100 times more milliTesla at the smelting plant than at the office, where there are hardly any measurable levels.

The electric furnace uses a great deal of electric current in a very smooth flow. At the office, we use less current, but it is very unpredictable. That is what makes the difference – and we don't register that with our instruments. If researchers are waiting for the electro-hypersensitive to come from heavy industry, they have a long wait. I would refer them to the office, instead.

Yet another example: There is an unaltered sinus curve in a light bulb, the current follows the supply current's voltage. In low-energy bulbs, the current is much more insubordinate. It breaks apart the supply current's sinus curve and generates a large number of overtones. The exact same applies to the magnetic fields, they follow the power consumption.

When we safety engineers go out with our measuring instruments, they are meant to summarize that confusion down to one collective value; a mathematical average, a so-called effective value. It is completely unreasonable to state a constant value for something that fluctuates. The point is that we react to the unpredictable currents.

A light bulb actually has a higher milliTesla value than a low-energy lamp. No electro-hypersensitive person in the world would agree that this corresponds to their reality. Low-energy lamps are truly a curse. A light bulb shares the supply current's frequency almost entirely, 50 Hz. A low-energy lamp displays a large number of new frequencies. One or more of these annoy us more than 50 Hz.

A photocopier can produce the same measured value as a monitor, but all electro-hypersensitive individuals know that standing next to a photocopier is much worse than a modern monitor.

When I drive my car at 50 km/h, it causes a great deal of trouble, but if I drive at 100-110 km/h, I am hardly bothered at all and can drive as long as I wish. The same source but different frequencies. Some of them are more annoying than others, and researchers must find some way to determine which ones they are.

Most often, the internal supply frequency for a low-energy lamp is considerably higher than 50 Hz. These days, they are driven by 10,000 or 20,000 Hz. The overtones will then of course be multiples of those numbers. They will be at very high frequencies and contain a lot of radio waves. The range measured by our instruments is so narrow that we miss radio waves and microwaves entirely. That is a shame, since those are the waves that are constantly increasing in society.

An example of annoying radio waves: I have a summer cottage located in a good area, cellular phones can't be used there, so that kind of disturbance is missing. I have electric heating. I haven't done any EMF-reduction whatsoever. Even though the "El-fix⁴⁶" goes off just about everywhere, I can be there in the summer and winter, with a high-energy consumption. I can even watch TV, channels one and two. Unfortunately, we couldn't see TV4 and so we bought a booster, a little box that was connected to the antenna and the electrical outlet, both at the same time. When this connection was made – even though there was no direct connection – I couldn't remain in the house any longer because my skin started to ache all over. It appeared that the TV signal had gotten into the electric system. That was all that was needed. It really is those small, small details that count, even for us!

The rapid development towards more and more signals in the house - many will be sent via the electric system – will continue if no one stops it.

We miss most of what we measure, and we are lacking threshold levels. The ones we have are antiquated and are not in the least bit applicable. The methods of measuring must be changed. (Statement 27)

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The modern electric equipment causes added problems for the electro-hypersensitive. An explanatory model for electro-hypersensitivity must pay attention to this!

One example is our new TV set from 1999 (Grundig ST 70-715 NIC/TOP). It brings out symptoms in me after five minutes and is more or less unbearable after about twenty minutes. I can normally endure our old TV from the beginning of the 80s (Luxor type 18067181 Rigoletto) for an entire evening with only mild symptoms.

⁴⁶ A simple instrument that detects electric fields sounding a beep.

The new car, a Volvo S40 that we bought in 1999, produced severe problems, and I don't like to ride in it for longer than 20-25 minutes. Our old car, a Volvo 360 from 1985, caused only mild symptoms, and I could even take longer trips in it. I feel quite all right in an older diesel car, which can be driven without any electricity!

That's consistently the way it is. The new "Car 2000" on the subway causes strong, unpleasant symptoms, while symptoms caused by the old cars are no more severe than just generally being in out the center of town. Not to mention the new "blue buses"; they are terrible and the symptoms begin as soon as I get on. And I am not alone among the electro-hypersensitive to have these kinds of experiences!

Even at work, the conditions are similar. I have been able to use my older computer with a LCD monitor from 1988 respectively 1989, often during the entire workday, after a simple screening of the monitor. The computer and monitor from approx. 1998 that now comprise our "standard workplace" produce powerful and unpleasant symptoms after only 5-10 minutes. Of course, several kinds of electric and magnetic field reductions have reduced my problems, but not enough.

It is interesting to note that the computer, the monitor, the accompanying battery eliminator as well as the keyboard, each contribute to the problem, which I was able to establish by means of disconnecting different parts of the equipment. Consequently, the symptoms cannot be attributed to a factor such as flickering alone. Particularly interesting is that the symptoms diminish dramatically (but not completely) when the cable connecting the monitor and the computer is disconnected, even though this cable is shielded and grounded. Why is this⁴⁷?

Other examples are various modern telephones (digital, conference telephones etc.). They cause difficult problems for me even if I'm not using them, i.e. as soon as they are turned on⁴⁸. For this reason, I use older models (from the 80s or earlier) so as not to become overly ill.

What, then, differentiates these new products from the older ones? Something that appliances of today have in common is that they contain electronic equipment with components such as microprocessors, switching power supplies etc. Consequently, they generate high frequency and radio frequency fields, in many cases around several hundred MHz, i.e. microwaves. Another characteristic is that the equipment is often constantly activated; this applies, for example, to the new telephones.

Our new Volvo S40 contains several computerized units; the old one had no such electronic components at all. The frequency of the processor in my old computer was about 10 MHz, and thereby there were overtones of up to perhaps 100 to 200 MHz. The frequency of the processor in my new computer is over 100 MHz, and so the circuits generate overtones up into the microwave range.

Explanations for electro-hypersensitivity must therefore take into account sensitivity to high and radio frequency fields, and then fields from the very low levels that can originate from the weak signals and microwave radiation from the new appliances. That electro-hypersensitive individuals could be able to react to such low levels is completely consistent with the fact that we can react to fields from cellular phones at a distance of ten or so meters and to mobile telephone transmitters from a distance of several hundred meters. (Letter 187)

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My girlfriend developed severe electro-hypersensitivity in the autumn of 1997. The reason I wanted to make a statement to the Council for Work Life Research's hearing is that this, together with my background as an engineer in technical physics and a postgraduate student, has meant that I have acquired a good understanding of the factors that can trigger electro-hypersensitivity and the problems faced by those who are already electro-hypersensitive (of whom I have met quite a few during the past couple of years). These experiences should be useful as a starting point for research, and for electro-hypersensitive individuals who wish to avoid problems as much as possible.

⁴⁷ When there is no signal from the computer to the monitor, the fields are much reduced. A simple test is to hold a transistor radio, set between stations, close to the monitor - you can easily hear the difference in emission.

⁴⁸ One explanation might be that modern conference phones use a Digital Signal Processor (DSP) that generates high frequency fields.

Regarding the EM⁴⁹ fields/radiation that causes the problems, it can be stated that the frequency content is of central importance. In this, a very wide spectrum must be considered, from static fields, over quasi-static and radio frequencies, to microwave radiation and even up to ultraviolet light (from strong sunlight and fluorescent lamps), for which the electro-hypersensitive often have heightened sensitivity. The negative effects on health from ionizing radiation from frequencies even higher have been well documented for some time and can hardly be considered as electro-hypersensitivity. The frequencies that seem the least harmful are those man has been exposed to throughout his development, and up to levels found in nature (static fields, heat radiation, light...).

When one speaks about different frequencies of a certain signal, it is important to keep that basic theory in mind; the separation into different frequencies is done with Fourier analysis in which each frequency represents a sinus wave with that particular frequency. The limitation of a measurement to a determined frequency/small bandwidth, filters incoming signals so that only one sinus/sinus-like wave remains.

According to my experience, the low-frequency field within the ELF⁵⁰ band (such as the electric power frequency of 50Hz), excluding the overtones and superimposed interference, has little effect on most of electro-hypersensitive individuals⁵¹. The scientific studies that have indicated an increased risk for cancer and sleep disorders in the case of such exposure were conducted on the general population or "healthy" test individuals. The problems experienced by the electro-hypersensitive regarding the electric power supply depends instead most often on its content of higher frequencies that become greater closer to the consumer stage in the power distribution chain and that originates from overtones in such things as transformer equipment and interference from connected appliances, such as electric motors, switching power supplies, digital electronics, etc.

The same situation must also apply for monitors. The measuring methods that have been prepared (TCO 92, MPR. II) are limited to the more harmless, lower frequencies instead of covering the entire spectrum that is really transmitted. This is due in part to a desired simplicity in the measuring procedures and in part to the drastic increase in frequency content, with higher refresh rate and resolution since the standards were set (moreover, the threshold value has been set in relation to the values of monitors available on the market and not with consideration to research on the effects on health). Nor do the approved monitors in general produce fewer symptoms than others, which clearly indicates that the measuring methods should be updated.

As I see it, research should be concentrated on the effects of higher frequencies, and when it comes to studies such as provocation tests, measuring of as wide a bandwidth as possible should be done (a spectrum analyzer is a good tool for this). Few electro-hypersensitive individuals can differentiate between the affects of different frequencies, so the test can be a total failure if one only concentrates on a certain frequency band while the subject is bothered by another.

Particular attention ought to be given research into exposure to microwaves, since nowadays most Swedes are constantly exposed to microwaves from cellular phones and their base stations, especially considering the recent results from experiments with rats. Many electro-hypersensitive individuals have been forced to flee from their homes and to repeatedly relocate to new areas due to the rapid expansion of mobile microwave-based communications.

Another observation that is important to consider for someone who is electro-hypersensitive and wants to be able to function as normally as possible, is the importance of being able to recover after exposure. The majority of electro-hypersensitive persons are unable to do so at present, and a certain amount of relief could sometimes be found, even if a break from one type of exposure cannot be accomplished without the forced exposure to another type. However, if one is forced to choose between a rock and a hard place, a change can be nice. Of course, it is unreasonable that this is often the only choice available, and it is one of many strong arguments for the establishment of so-called low-radiation zones so at least the home environment can be acceptable.

⁴⁹ Electromagnetic.

⁵⁰ Extremely Low Frequency

⁵¹ Nevertheless, there are such studies, see e.g. Persinger MA 2000, PubMed ID: 11018304

With regard to the entire course of electro-hypersensitivity as an illness, there is first of all a tendency to fall ill relatively rapidly after accumulated exposure to many risk factors, similar to "the straw that broke the camel's back". Among the risk factors are strong electromagnetic fields/radiation over an extended period of time (from working with monitors, fluorescent lamps, DECT telephone systems, mobile telephony, transformer stations and so on) and chemical influences, mainly from various metals, but also from solvents etc.

In the same way, MCS (Multiple Chemical Sensitivity) is often a part of the electro-hypersensitive individual's array of symptoms. Brominated flame-retardants have often been mentioned in this context, but the problem with amalgam and, to a certain extent, other dental materials occupy a special position. There are many people who have developed so severe neurological problems from EM fields after improperly performed amalgam removal that they have been forced to leave everything and move to an isolated cabin in the forest or some other similar place. That this specifically was the triggering factor is perhaps not so peculiar, considering the amounts of electrochemically active heavy metals and other metals that are released. It is obvious that it is also a question of individual sensitivity that can be hereditary or may depend upon exposure to amalgam in the womb due to the mother undergoing major dental work during pregnancy (compare maternity dental care during the 60s and 70s). Negative synergy effects such as these are seldom considered when threshold levels are established, but if many threshold levels for a variety of types of environmental influences were lowered, a large number of electro-hypersensitivity cases could be avoided.

Anyone who begins to have mild problems from such things as redness of the skin and loss of hair after working at a monitor should also take care not to "break through" and become afflicted by the more severe neurological form of electro-hypersensitivity. The first phase after falling ill is often characterized by a very rapid reaction to EM interference that quickly recedes when the interference disappears, which means that the person in question can act as a detector for a specific source of interference if the rest of the environment is good enough. However, this ability disappears if the person simultaneously or without sufficient recovery is exposed to other negative effects of an EM or chemical character, since he/she then instead feels generally sick all the time. Often, one cannot differentiate between the effects of completely different negative stimuli. The effects of a sufficiently good environment and sufficiently long recovery time are of course very individual, but one must always take this into consideration if any type of provocation trial is to succeed.

If the subject is rested and feels as good as possible before the test, it becomes much easier for him/her to discern a change for the worse in the electromagnetic environment. Therefore, one must choose a test environment in which the subject feels good as long as the controlled provocation is not put into effect.

In a later phase in the development of the illness (perhaps as soon as after a half-year), the reaction pattern is often slower. If different sources of interference come too close to one another temporally, they cannot be differentiated individually (the time span can sometimes be measured in days), but instead lead to a generally deteriorated condition. This effect as well has probably ruined many provocation studies. (Letter 58)

The following letter writer is also skeptical about provocation studies, but still provides examples of how a few such studies that were properly prepared could show a connection between exposure to electricity and symptoms:

The undersigned, an electro-hypersensitive mathematics, physics and ex-computer instructor, has had plenty of opportunities during the last nine years to study both my own and other electro-hypersensitive individuals' reactions towards exposure to electricity. What bothers me is the difficulty to show a statistical significance between that exposure and the problems experienced during provocation studies.

For myself, I have been able to establish that avoiding exposure to electricity, which includes the EMF-reduction of both my home and place of work, is the factor that has helped me remain symptom-free in most situations. After being "careless" with too much exposure, my sensitivity increases dramatically, and that increased sensitivity can sometimes remain for a week or longer.

When I analyze my own reactions, I find that, with certain types of exposure to things such as unshielded cables and light bulbs at a distance of several meters, the symptoms are nearly non-existent or that they only appear after an extended period of exposure. Then there is a large “gray zone“, in which I feel stronger or weaker symptoms, or sometimes none at all, depending in part on my “day’s form“, in part upon any high frequency interference that may occur at the time. When I am in the “gray zone’s outer edge“, i.e. in weak EM fields, and have been given the task of registering any EM fields, my senses are fully activated, which possibly increases the sensitivity or in any case the conscious registration of any fields. There are those who prefer to call this “the expectation effect“. I mention this because I wish to be believed, even when I say that I *know* that I get sick from many EM fields and that the connection between exposure and symptoms is quite clear. The problem of electro-hypersensitivity may depend upon many factors, but EM fields are the primary cause of symptoms.

It is a fact that an increasing number of people become sick when they are exposed to various types of electromagnetic fields, and there are studies that show significant connections between exposure to electronics and symptoms. One example is the provocation study conducted in 1991 by W. Rea et al. in Dallas, USA. In it, sixteen persons answered the question of whether they were exposed to electricity or not with one hundred percent accuracy.

An other example is the double-blind provocation study with cellular phones conducted by Associate Professor Olle Johansson in 1994, in which one person could determine whether a cellular phone was turned on or not in nine out of nine possible attempts. One single provocation study in which a single individual reacts to electromagnetic fields is enough to prove that that particular individual is electro-hypersensitive. In so doing, electro-hypersensitivity’s existence is also proven; i.e. one *can* be hypersensitive to electromagnetic fields. The fact of electro-hypersensitivity’s existence must not be confused with statistical risk evaluation of the possible harmful effects from various electromagnetic fields. A number of authorities work with similar risk evaluations, and in these cases conclusions and decisions are based upon consensus, i.e. a common interpretation. It is dangerous to confuse the existence of an impairment with risk evaluations.

And so now I ask myself: When are they going to start helping those people who are impaired and get sick from electromagnetic fields, i.e. are electro-hypersensitive, as opposed to evaluating the likeliness that it is specifically electricity that makes them sick or evaluating the risk that others will be impaired? It is of particular importance to help those persons who have become hypersensitive to microwaves. These people have no chance of avoiding radiation on their own. The only solution for them is the creation of free zones without microwave transmitters.

Associate Professor Olle Johansson has proven in the above-mentioned study that microwaves can make a person sick. The existence of harmful effects from microwaves has therefore been proven. What remains is to conduct an evaluation of the risks involved with microwaves. In this area, the study by Lund researchers Persson, Salford and Brun indicate that particularly the long-term harmful effects of mobile telephony have been considerably underestimated. It is conjectured that these damages will make themselves known in 10 - 20 years. (Letter 385)

A number of letter writers refer to foreign research to support the claim that electromagnetic fields can affect people’s health:

I think it strange that so many people maintain that electro-hypersensitive individuals have not been able to determine if electromagnetic fields have been turned on or off during provocation studies. Therefore, I would call attention to the study conducted by a research team in Dallas under the direction of William J Rea. In that study, 16 people could tell with 100 percent accuracy whether a power source that generated magnetic fields of a specific frequency was on or off. During the study, one individual was affected so strongly that he/she lost consciousness. These studies differed considerably from the Swedish studies in at least two ways. They had tested in advance which frequency each person was most sensitive to, chosen from among a number of frequencies emitted by computers. Another important difference was that the effects were measured with an iris decoder, which measures the size of the pupils.

Funnily enough, the same procedure doesn’t seem to have been done in Sweden, despite the good result. I haven’t been able to find a single Swedish provocation trial that used the same methodology.

A major source of error in the Swedish studies seems to be that no consideration has been given to the long recovery time necessary after an electro-hypersensitive individual has been exposed to electromagnetic fields. It may even be so that the condition becomes more accentuated afterwards than during the time one is exposed to the field.

One single Swedish provocation study of those I have read through was conducted in a way that took consideration for the electro-hypersensitive person's need of long recovery time after each provocation. I refer to Olle Johansson's study into whether electro-hypersensitive persons could feel if a cellular phone was turned on or off.

Considering the large amount of knowledge available among all the highly educated technicians within FEB, an intimate collaboration between FEB and those authorities that approve funding for various research projects should be natural. Despite everything, it is still probably those afflicted who have the best insight as to the way electro-hypersensitivity manifests itself and the contexts in which it occurs. (Letter 180)

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In the 60s and 70s, Soviet researchers established that various health-related effects resulted from radio frequency and electromagnetic fields. Exposure to non-thermal EMF could produce effects similar to toxins such as chemicals and heavy metals. A concordant discovery made by Soviet researchers was that when people and animals were exposed to radio and microwaves, that radiation suppressed the formation of cholinesterase and thereby resulted in a surplus of acetylcholine – the same effect as from organic phosphates. A few Soviet researchers specifically pointed out this effect of the enzyme as an important factor in connection with impaired functioning of the nervous system.

That exposure to radiation in non-thermal, non-ionized doses can produce the same effect as toxins such as insecticides gives us clear proof of the toxic effect of the radiation. This can also explain why a number of chemically hypersensitive patients are also electro-hypersensitive and why electro-hypersensitive persons are also chemically hypersensitive. The causes may vary, but the effects are the same, namely the suppression of cholinesterase. (Letter 328)

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Mobile telephony has emerged as a gigantic threat to electro-hypersensitive persons as well as to those who are still healthy. In particular, all the issues related to masts that have come up demonstrate this, as well as all the people who have had to flee to isolated, damp and drafty cabins out in the forest. They are not safe even there. The expansion of masts is going on at breakneck speed, with the goal of covering all of Sweden. Where will one be able to escape to then? According to the research results we have examined, the same debate is going on throughout the world. Base stations are making people ill. For many, the symptoms seem harmless, including headaches, sleep disorders, concentration difficulties etc.

The effects of microwaves are well known in Eastern Europe/Russia, where stricter threshold levels also apply. A great deal of information about microwaves and their effects can be found at tassie.net.au/emfacts. Dr. G. J. Hyland describes how an information system in the body, based upon biophotons in the microwave range, is disrupted by signals from pulsed microwave radiation. The same thing has been found by Swedish researchers, who have established that the blood/brain barrier is broken down by microwaves from a cellular phone; the weaker the signal, the more effective this is. The body cannot distinguish these external weak signals from the body's own, the result being chaos. The same thing, that is to say bioeffects in the case of low radiation levels, have been established by a number of researchers who participated in the Vienna Conference.

Countries such as Switzerland, Italy, Russia and China have obviously understood this, since they have lowered their threshold levels to between 2.4 uW/cm² (Russia) and 10 uW/cm² (Italy), from ICNIRP's level of 450 uW/cm². In Germany, environmental organizations and others want to further reduce threshold levels, or down to 0,000001 uW/cm² in an environment intended for sleep.

The behavior of cows that became sick from being in close proximity to a combined radio mast/mobile telephone mast in Southern Germany shows that not only people are affected. One can hardly accuse animals of being hypochondriacs. (Letter 249)

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Are we prepared to accept Australian John Holt's line of reasoning? He sees a connection between the major increase of radio frequency fields (microwaves, radio and TV transmissions etc. – commonly called electro-smog) and the increase of asthma and allergies. He says that certain frequencies of microwaves result in a doubling of histamines. In the case of an extended exposure to microwaves in the frequency range of 800 - 900 MHz, the normal antihistamines and cortisone preparations do not help. "The medicines," Holt says, "cannot shut off the production of histamines that the mast cells have started."

We can now study how children in the ex-eastern block countries, where allergies were nonexistent before, are now developing more and more allergies. Is it the western foods with the preservatives that some believe wipe out the sensitive intestinal bacteria flora, or is it the western construction materials, or could it be the rapid expansion of mobile telephony, the increased electro-smog that, according to John Holt's theories, can be the underlying cause of the rapidly increasing development of allergies? (Our own doctors and researchers do not have any particularly good or convincing explanations – they seem to be at a loss.) Can we take the truth? Do we dare challenge our own love for the cellular phone? Do we dare challenge the electronics industry? After all, it is somewhat of a sacred cow (and in addition, Sweden's money maker). Those researchers who have done so have been given a hard time. No research funds and a great deal of disrepute. Or must *all* of us users develop allergies, become much sicker, inhale enormous amounts of cortisone and *finally*, in a few years, *start* to think along these lines? Are we doomed to always have to go the long way around? (Letter 366)

Views as to what needs to be researched and how the research could be planned are also contained in the letters:

As a person with a wife who has been electro-hypersensitive for quite some time and a daughter who is also electro-hypersensitive, I would like to present the following:

It is of course of the utmost importance that, as soon as possible, we should examine and succeed in determining how neurophysiological and other mechanisms in the body are affected by electromagnetic fields, since these have a clear tendency to be on the increase in society. Knowledge about this is also a prerequisite to, if possible, be able to relieve the problems of the electro-hypersensitive in a way other than having them flee from society and all its conveniences. On the other hand, that which is surprising is that money is being spent on meaningless provocation trials that are not being conducted in conditions conducive to the electro-hypersensitive subject. Since the causes of electro-hypersensitivity are extremely individual, i.e. different people are sensitive to different field types and frequencies, an enormous number of test subjects and repetitions within a number of frequencies and combinations of frequencies are needed to provide the chance of arriving at a significant result.

It would be much more effective to study the influence of the field on different reactions in the human body and, based upon that knowledge, build an hypothesis about how man is affected. Knowledge about this causality is also required in order to make medical treatment of the afflicted possible. (Letter 386)

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Something else that needs a great deal of research into is what happens in the body when an electro-hypersensitive individual is subjected to electricity. For example, some of my patients develop disturbingly severe respiratory problems and/or lose consciousness in the vicinity of such things as cellular phones. They of course wonder if I, a doctor, can help them – they experience their life is at risk in these situations. One of these patients can remain unconscious for several hours after an adverse electric contact. She lives alone in a summer cottage out in the forest, sometimes her mother, who is in her 80s, can stay with her – this patient is rightly afraid that she will freeze to death if she is afflicted by that kind of sudden unconsciousness outdoors in the wintertime. By means of research, one may be able to help these patients pharmacologically, but at the present time no one knows what happens within the body during these occasions.

In order to research the most sensitive of these patients, special conditions are required, since they live free from electricity out in the forest and cannot tolerate being close to any electronic apparatus.

General research is also needed regarding what happens in electro-hypersensitive persons' bodies when exposed to electricity so that they can get the support from society that they have every right to expect. (Letter 397)

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The enormous feeling of fatigue that I experience when exposed to electric and magnetic fields can continue even after the exposure has ended. This fatigue is reminiscent of "Chronic Fatigue Syndrome"; what happens to me must be some sort of energy deficiency in my cells. That is why Per-Arne Öckerman's research into the way the quantity and appearance of blood corpuscles are affected by free radicals is tremendously important.

Electro-hypersensitivity produces many different symptoms and is a *physical* illness, not a psychological one. From a neurological perspective, I think it interesting to compare electro-hypersensitivity with epilepsy, where the brain cells are "drained"; electro-hypersensitive reactions may be something similar. If I am in a room with very high magnetic and electric fields, my entire body tingles and it feels as though electric current runs up and down my legs. In other words, other electric systems interfere with the body's electric system. (Letter 53)

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I am tired of having my mental health questioned repeatedly, so why not stop psychologizing about what we don't know and start doing some real research instead? It is actually more realistic that electromagnetic radiation does affect people negatively than we only imagine that it does. Encourage as many as possible to conduct research; it is not enough that a short report drops in from time to time, in that case it will take many years before we reach any conclusions. All research is beneficial as long as "dependant" researchers working for the computer and mobile telephone industries don't take care of most of the research. I hope you agree.

I think that the entire business with electro-hypersensitivity is discomfoting, and I hope that you do something about it, otherwise you will be ashamed forever after. I am 22 and I don't want you to waste my life away just because you can't or don't want to take our symptoms seriously. I want to be able to work and support myself like everyone else. I refuse to go on social welfare, because that is not the kind of life I've planned. I realize that I am neither diplomatic nor pleasant. I am in too much pain for that. The pain makes me extremely angry and I can't manage to write any more. I quit here! (Letter 162)

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Check the effects on the population of world-leading IT Sweden, which is currently involved in an invisible and totally uncontrolled full-scale experiment, where the results are already becoming apparent in an increase of sick leave, an increase in the use of medication, nervous children, diffuse feelings of illness etc.

The electro-smog is total and man is not meant to tolerate that which is presently taking place in the air, on the ground and in electric power lines. The development of such things as remote-controlled networks at offices, with a steadily growing range of frequencies and frequency positions of the same caliber as in our microwave ovens, can be a living hell for personnel, and new victims are being claimed.

According to the current viewpoint, the problem lies with man, since it can't be technology, can it...?

It is time to get to the bottom of this and find out what happens biologically with man when new technology is put into use. Blue tooth technology instead of "wire technology", analog technology as opposed to digital technology (DECT telephones, for example, are a suitable object).

Test what happens with personnel before and after a technical change, such as:

- increased medicine usage
- more doctor appointments (increased sickness and problems with uneasiness)
- increased absences due to illness (short and long-term)
- sleep disorders/fatigue/headaches
- skin, mucous membrane and eye-related/problems
- body temperature

Follow up with tests besides the standard tests before and after the workweek, respectively before and after longer vacations, such as:

- hormonal status (thyroxin, estrogen, testosterone/sperm)
- body fluid acidity/conductivity/oxygen content
- electrophoresis (albumin etc.)
- metal content, Fe, Cu, Al, in blood, urine and faeces

We electro-hypersensitive are aware that some frequencies interfere more than others. If this could be verified, it is possible that new technology could be developed that is less disruptive than the current technology.

Biological effects of new technology must be tested in conditions suitable to the individual and not in conditions set by technology and industry, as is the case at present. It would not be a catastrophe if some equipment were done away with. In that case, new equipment would have to be manufactured, which would hopefully be much better for all of us.

If the biological tests suggested above display results from the influence, it verifies what we electro-hypersensitive already know, namely that:

the effects are real but...

the effects are delayed (are not manifested simultaneously with "on")

the effects remain for different lengths of time after exposure (do not stop directly after "off")

(Letter 8)

If electro-hypersensitivity is triggered by chemicals and/or electromagnetic fields, interdisciplinary research is necessary:

I am, however, fairly optimistic about my future. I believe and presume that I will get better. I may never be healthy enough to sit and work with a computer, but in any case well enough that I can retrain for a profession less dependant upon computers and be able to be out among people in normal environments. I also believe and hope that research will make progress. That the causes for electro-hypersensitivity will be established and measures taken so that no more people than necessary are afflicted.

I also hope that research will become more interdisciplinary. During the last half year I have also become chemically hypersensitive, as have many other electro-hypersensitive individuals. All of these modern illnesses (electro-hypersensitivity, multiple chemically hypersensitive, amalgam illness, fatigue syndrome, fibromyalgy) seem to be connected in some way. (Letter 352)

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It is a mystery to me that no one in Sweden has been able to conduct provocation tests that establish a connection between electricity and illness. More than anything, the tests resemble experiments in which one alternately eats a mushroom sauce with and without poisonous species in it and in between answers questions about how one feels. When the symptoms appear, the test may have been over for quite some time.

I would like to conclude with a wish list. My first wish is: Stop being suspicious of us and start listening. After having listened carefully to 3000 patient reports, Professor Robert Olin⁵² states how he is convinced that electro-hypersensitivity is a reality, as are many other unexplained conditions. He expresses a deep indignation over the attempt to explain the condition as psychological.

Associate Professor Bengt Arnetz' study at Huddinge Sjukhus, presented in 1996, revealed no increased frequency of psychological symptoms in electro-hypersensitive persons. Have those results been forgotten, where have they gotten to? If the condition is not primarily psychological, there is a great risk that it will become so, the way we are often treated by physicians and the authorities.

My second wish is: Do research, not just in areas where personal interest lies, but where the issues for a comprehensive picture exist! There is a Swedish expression that goes, "You get the answers to the questions you ask" – the same applies to research.

⁵² This is presented in a governmental report named "Nya Diagnoser" (New Diagnosis). It was written by Robert Olin, MD and Professor Emeritus of Preventive Medicine. The report was prepared on behalf of a Parliamentary Commission appointed by the Swedish government. It was published in October of 1999.

Forget about prestige and solve the puzzle together, in an interdisciplinary fashion! As far as I can tell, the expert groups lack such expertise as an epidemiologist, a toxicologist, a neurophysiologist. You may be there, but I haven't been able to find you.

In my investigations in the literature, I haven't been able to find a single broad, in-depth epidemiological study, i.e. one that clarifies the conditions under which man is afflicted with electro-hypersensitivity. A study of this kind would probably show unusual connections between problems with electricity and chemicals from new computers etc., problems with electricity and emissions from houses with moisture damages, from high frequency radiation from such things as cathode ray monitors to computers, and not least the onset of the illness in connection with amalgam fillings, a mixture of metals in the mouth and sulfa materials in the teeth. There are many examples. The customer registry of EMF-reduction companies, Liberec and others, would provide interesting patient material to consider. (Statement 1)

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At present, there are about 100 known brominated flame retardants on the market. They are all different. There are methods for measuring two of them, but they are only found at Stockholm's University and one other place in the world. These substances are very similar to PCB. They are neurotoxic in the same way as pesticides, epoxy glues, photo solutions and formaldehydes. They are present in a large number of TV sets, monitors and thermosetting plastics. These materials are vaporized when heated, i.e. when the appliance is used and heat is produced.

There are no threshold levels for these materials. Two of them will be prohibited, probably within one year. At the moment there is only a voluntary agreement concerning limitation.

300,000 tons brominated flame retardants come out on the market every year. Half of them have the designation TBBA, which is most commonly found in fields such as electronics. A sub-component in these materials is called bisphenol A, and it has been known for many years that it can give rise to photosensitivity. I think this is important, since nearly all electro-hypersensitive individuals exhibit photosensitivity.

The brominated flame retardants are reactive, which means that they quickly bond with other materials and make them extremely difficult to measure as emissions from appliances.

I think it is interesting to compare electro-hypersensitivity and multiple chemical hypersensitivity. The array of symptoms is very similar. After having found out what people have worked with and what they were involved with, it seems that for most individuals, electro-hypersensitivity begun with some form of neurotoxic strain.

Chemicals are not tested in the same way that pharmaceuticals, for example, are tested, but only for so-called acute toxicity. This means that a substance such as PCB, which is prohibited, would today actually pass that kind of test and could come out on the market.

Nor are there any methods for measuring many of these chemicals in blood.

Many of you have certainly heard about the mass death among frogs. I believe this is a parallel to what we are talking about today. Frogs have been on our planet for 250 million years, and now they are dying en masse all over the world. Researchers are working in interdisciplinary and international ways with this issue, and the basic hypothesis is that there is some connection between environmental toxins and increased UV radiation due to the depletion of the ozone layer.

In conclusion, I would like to say that that which I feel is lacking and which I would like to convey to the people who administer these questions on behalf of Sweden is a comprehensive strategy for dealing with these extremely difficult issues and an ambition to really identify interesting causes. I believe many interesting clues can be found among those individuals who actually are impaired.

I also think it is interesting to prioritize certain subjects, and I think that the areas dealing with the biological effects of specifically the combination electromagnetic fields and chemicals should be so prioritized. I think a high priority should be given to brominated flame retardants, since they are found in electronic appliances. And I think that both short-term and long-term effects should be studied. In addition, common denominators in electro-hypersensitive individuals should be investigated, i.e. search for toxins, inflammatory levels and so on that may correspond. (Statement 6)

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I am hoping that a research project will be initiated that is independent from all market interests. Research that is conducted without any preconceived notions and is done in an interdisciplinary manner. (For example, engineers, biologists, neurologists, eye specialists etc.) Because if we can understand the causes as to why electro-hypersensitivity arises, we may be able to develop a medicine that helps. (Letter 415)

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My wish is that more research funds be allocated to map out how alternating fields, magnetic fields, microwaves and radio waves affect the body, as well as synergy effects with PVC, PCB, flame retardants and mercury. (Letter 256)

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The research project "Chemical Emissions from Monitors" is included in SIF's (The Swedish Union of Clerical and Technical Employees in Industry) Zero-risk project, in association with Stockholm's and Lund's Universities. Pictures taken with thermocameras reveal that the various plastic components in monitors reach a temperature of up to 125 degrees Celsius. The high temperature is the source of emissions for a large number of heavy chemicals, chemicals that monitor users are exposed to.

Professor Åke Bergman's research work indicates that substances such as brominated flame retardants are found in the blood of electro-hypersensitive individuals, chemicals that are accumulated in human tissue/organs, breast milk etc.

How are our organs, brain cells etc. affected by accumulated chemicals in combination with exposure to EMF and radio/microwaves?

Research should be expanded so that knowledge of any synergy effect between chemicals and EMF can be established. (Letter 132)

In the following detailed letter to RALF, a physicist provides many possible approaches for interdisciplinary research into electro-hypersensitivity:

The word electro-hypersensitivity can be broken down into its word roots and means an unhealthy sensitivity towards electricity. The hypothesis is that voltage-charged and/or power-consuming appliances can produce symptoms in these people. There can of course be other factors as well, but electric and/or magnetic field/radiation is the only factor that *cannot* be excluded. If you do so, then we are talking about a syndrome other than electro-hypersensitivity. Consequently, fields are a necessary factor for the concept of electro-hypersensitivity, but whether they alone are enough is unknown/doubtful.

Many consider electro-hypersensitivity to be a condition, but my experience indicates that it is more like a *process*. Someone who has recently been afflicted with electro-hypersensitivity does not display the same reaction pattern as those who have been electro-hypersensitive for a longer period of time (chronic condition). Superficial temporary (regressive) symptoms, primarily around the skin and eyes, characterize to a large extent the newly afflicted, while more diffuse and neurological conditions are more common among the chronic group. Memories of the reaction can persist even if they are consequently no longer pertinent, therefore it is important not to let the actual *fear* of the symptoms control one's life, but rather carefully test one's way again and again.

I see it as a process, in part a sensitization, i.e. the initiation of sensitivity. This can be an occasion that is in direct connection to the first symptoms that appear, or have occurred much earlier. Sensitization can have many origins, it is conceivable, though not likely, that fields are the cause, a much more likely cause is exposure to chemicals. These chemicals are probably fat-soluble and bio-accumulative. Once one has been sensitized, the symptoms can be triggered by such factors as fields, but others as well, such as light, chemicals (printer's ink, metals, solvents, alcohol, perfumes, cosmetics etc.) or even intellectual work (concentration). The worst sources of symptoms are considered to be monitors, fluorescent lamps (including low-energy lamps and HF powered fluorescent lamps), TVs, telephones, cellular phones, cars and quite a bit more. The seriousness of the symptoms triggered by the exposure depends upon one's general state of health; the sensitivity often varies from day to day and from year to year. There can be good and bad periods.

One should view the body as a whole, a balance between different systems. It is obvious that these systems are out of balance in a person who is hypersensitive. There are different comparisons that can be used; one model that has been presented is the so-called goblet model in which the various strain factors are thought of as drops that, in the end, fill the goblet and cause it to overflow. One should stop filling the goblet, or else find some other way to empty it. As I see it, it isn't certain that the *last drop* should be blamed for causing the goblet to finally overflow.

I would like to introduce two more comparisons. Think about the different systems in the body as a chain; when the chain is strained beyond a certain point, a link breaks. It is the person's weakest link in the chain that breaks first; it can be different for different people, which corresponds with the fact that observed symptoms vary considerably from person to person. One can compare the long-term effect of some accumulated factor with something that weakens one or more links in the chain until it breaks. This factor can be a different one than the/those factor/s that later trigger the symptom.

The third model is a pendulum. When a factor pushes the pendulum so that it is out of balance, two things can occur – it can either speed up or slow down the system. The pendulum can be pushed out of the center position for different lengths of time and afterwards take different lengths of time to return back to the center position. The pendulum can also swing too far back and go past the center position, which is common for a system with counteracting forces. In such cases, relapses can occur, i.e. either to first feel *better* and then feel worse, or to first feel worse and then feel better and perhaps later on worse again because the balance went too far in the other direction. It happens that electro-hypersensitive individuals experience something of a *kick* from certain fields during a certain period of time, and then later pay the price and feel poorly.

There is also the tendency in counter-balanced systems for an adaptation to occur by adjusting the opposing force against the influence, which means that when a balance is achieved one can feel healthy even though a source of exposure is present. When one then *removes* the source of exposure, the body is once again in a state of unbalance and symptoms arise; to put it simply one suffers from *withdrawal symptoms*. In addition to the pendulum being able to swing past the center position, oscillate back and forth (there are electro-hypersensitive individuals who describe symptoms that come and go even if the environment remains constant), one can also imagine that it gets stuck in some position – that results in a chronic condition. In order to help a chronically electro-hypersensitive person, it may be that the body must be helped in some way to force the balance back again, probably with medical treatment. This of course presupposes that the influencing factor/s are first removed.

It is my firm conviction that fields cannot be excluded as factors for electro-hypersensitivity. This is based upon a very long series of observations and actual measurements of fields. During the last six years I have conducted many comprehensive measurements of everything from static (0 Hz) to electric/magnetic alternating fields all the way up to the microwave range (GHz), in the form of non-ionized electromagnetic radiation. A pattern has arisen in these measurements, in combination with case descriptions. If the electric field is reduced by means of properly conducted actions to the electric system and the appliances, many symptoms disappear, primarily skin conditions. If the magnetic field is reduced primarily by lowering the stray currents, other types of symptoms disappear, mainly diffuse, deeply rooted symptoms and there is an improvement in general health/degree of sensitivity. If radio frequency fields are dealt with, certain skin symptoms, headaches and heart palpitations disappear. (These symptoms should *not* be viewed as an authoritative list but rather as an illustration.)

Proper technical actions are a successful and effective method of reducing the degree of sensitivity for an electro-hypersensitive individual - in all reality the only one so far with any major success. Medical treatment has produced very mixed results and has to be considered from person to person.

So far, the majority of measurements have been conducted as a form of mapping, which can be of interest from a research point of view but is completely meaningless with consideration to actions. It is not possible to develop effective suggestions for actions entirely from the field's extent or strength, the *source* of the field must *always* be identified, otherwise the actions are often incorrect. Many EMF-reductions have failed due to a lack of knowledge and rules of thumb. Resources and research regarding measuring is needed in order to correct this. There is a need for the education and certification of qualified measurement technicians. Experience from technical actions that have been carried out must be collected and published.

The absolute strength of the field does not appear to be a decisive parameter, nor does the frequency; it is probable that the field's influence is found in certain windows in which the frequency-field strength-direction-coherence all play a part. Only when we understand the fundamental interacting mechanism between fields and a chemical event in our bodies can we begin to develop methods of measurement that are to some extent correct, or develop the threshold levels we so desperately need.

Electro-hypersensitivity is a complex phenomenon with many possible influencing factors; however, there is only one which cannot be excluded, and that is fields. (Letter 370)

Finally, a letter that reminds us of how we have often had to revise our understanding about the dangers inherent in various substances:

A greater degree of humility from a large section of researchers would be appropriate. "Scientific truths" are, as we all know, very much time-related. The fact that the earth is round was a truth that could cost you your head. For a long time, asbestos was completely harmless. Mercury is harmless as long as it remains in our mouths. On the other hand, mercury thermometers are dangerous and have to be collected. When you are dead the mercury found in your mouth becomes dangerous. Cadmium, another high risk substance that was prohibited a long time ago, is and has been harmless as long as it is used in our teeth, but it is extremely dangerous as a pigment in plastics.

The electromagnetic environment that today is only in its initial phase has changed and is changing our society in a way that cannot be compared to any other time in history. We are rushing blindly into something completely unknown with regard to how we will be affected. No living organism has ever been exposed to anything similar. In an historic perspective, the only thing we have been exposed to is cosmic radiation in the form of more mild waveforms (sinus waves).

At present, the tendency towards digitalization at all levels is new. To get far away from the sinus wave, i.e. to create as perfect a square wave with as high a frequency as possible in order to transmit as much information as possible. This is something completely new that living organisms must endure without being able to protect themselves. (Letter 143)

Politicians and the Authorities

It is my opinion that granting building permits for high frequency pulsed transmissions, which results in forcing disabled individuals from their handicapped-adapted homes, is a violation of Agenda 21's stipulated precautionary principle, the UN's declaration concerning human rights and the code of standards for disabled individuals' participation and equality in society. The government violates the above agreements without flinching for one reason alone: money. The profit of the telecommunications companies is more important than people's health. (Letter 50)

According to many letter writers, various political institutions as well as public authorities within the national government, county councils and municipalities neglect the electro-hypersensitive. This must be changed. A long series of letters express sorrow or anger directed towards the authorities because nothing is being done to stop the discrimination of the electro-hypersensitive.

Employers must be given clearer and greater responsibility for making arrangements for persons with disabilities and to adapt jobs according to the individual's circumstances. We have to secure better support from society that is effective and actually leads to results. And there has to be a better collaboration between the social institutions. Occupational research into electro-hypersensitivity cannot be limited to an individual's symptoms and its causes. Research must also be directed towards how working life, companies and society can make room for persons with disabilities. Protection and measures against discrimination must be powerful and effective. (Letter 209)

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One of the problems I encounter is that there is no treatment for the condition electro-hypersensitivity that is accepted by society. I pay my fees to the regional social insurance office, but I don't receive any help when I need it. I have been undergoing acupuncture treatments all these years and that amounts to quite a lot of money, since there is no high-cost protection. The treatments are helpful and pleasant, the problem is that this form of treatment is not included "within the system".

It should be time for the Swedish society to consider electro-hypersensitivity as a handicap that requires resources in order for those afflicted to get on with their lives and should also be taken into consideration in social planning. Our entire modern society is geared to the use of electricity as its power source – a power source that has its downsides. The structures have to be adapted so that everyone has the chance to live in society. Most things have now been adapted so that the physically handicapped, for example, can get around everywhere without a problem, and that's fine – when will there be an adjustment for those who are hypersensitive to electricity so that they can get around freely in the modern, urban society without being harmed? (Letter 357)

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It is surprising that researchers conclude time and again that there are psychological causes behind this. That is like a slap in the face to those of us who are ill. We are Swedish citizens who pay taxes like everyone else; we have the right to society's help, not its scorn. We sit isolated in our homes the way cripples did in days gone by. There are those who can't live at home and have to stay in a trailer out in the forest or commit suicide. This is a horrible discrimination of a group of people that society has made sick from amalgam and cellular phones, base stations, power lines etc.

It cannot be right that people are exposed to all of this electro-smog that certain companies earn billions from. This is because it is sacred and researchers are not making any progress with these issues. Society must take its responsibility, since this can be a ticking bomb for everyone using cellular phones. (Letter 168)

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The government must demand that municipalities safeguard areas from mobile telephone masts, so that those of us who are electro-hypersensitive, and there more and more of us, aren't forced to live in garages, playhouses, sheds, tents and ice-cold cottages. (Letter 31)

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I have been on sick leave for eight months. At the moment I am slowly making progress and am testing work places by means of a rehab-subsidy. The margins are small. As society becomes more and more high technological, more and more people are getting their feet knocked out from under them. What is society going to do with everyone prevented from living a normal life? (Letter 369)

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Those of us who are electro-hypersensitive definitely need a new policy in order to win our trust, a new policy that accepts the existence of electro-hypersensitivity despite the lack of scientific evidence. This is of the utmost importance in order to prevent discrimination and the deprivation of legal rights. With a new policy, even those of us who are electro-hypersensitive would be able to participate, in accordance with our Prime Minister Göran Persson's government declaration: "People with disabilities are to have real opportunities for participation. Tougher legislation will be introduced to prevent the discrimination of the disabled on the job market and in the rest of society. Access to public facilities and public transportation will be improved."

Let me take the liberty to act as spokesman for many individuals with severe electro-hypersensitivity. This discrimination must be stopped. It is not worthy of a democratic and humanistic society like ours! (Statement 19)

The regional social insurance office also discriminates the electro-hypersensitive, many letter writers contend. They are often denied the right to a sickness benefit:

My mother has been electro-hypersensitive for over ten years. As a daughter, it is very difficult to see how your mother is doubted and is not given help from any of the authorities. In Sweden, we live in a welfare society and are supposed to have a social safety net, but this does not apply to the electro-hypersensitive. This gives one pause for thought. Isn't everyone of equal value in Sweden?

Electro-hypersensitivity does not constitute grounds for a sick leave according to the regional social insurance office, and sickness benefits are revoked. (Letter 145)

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And then I was doubly afflicted, because I was denied an allowance from the regional social insurance office. I applied in the beginning of 1997 and it was only recently approved. This was very difficult. I've had a very tough time due to the illness and the problems that accompanied the rejection. Among other things the sale of my belongings, welfare, the enforcement agency, etc. Not much fun. (Letter 331)

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The regional social insurance office withdrew my sickness benefit for a while. They suddenly decided that my illness was not scientifically confirmed. I had to turn to the County Administrative Court, and they reinstated my sickness benefit. (Letter 392)

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Those of us who are afflicted with the illness live with it, and with the handicap it entails, everyday, year in and year out. But society refuses to recognize the illness as long as the scientific version of knowledge is incomplete. This results in horrible consequences for many of us.

The attitude of the regional social insurance office is perhaps the worst of all. With threats and blackmail, many of those who are sick are forced to accept erroneous and fictitious diagnoses. I have personal experience of this, and I have just received confirmation that the problem is still prevalent. "There is no such illness, because there is no such code in the file catalog" is a common comment from administrators.

The threat of a revoked disability pension is also used to force us into different rehabilitation measures, regardless of whether there is any suitable rehabilitation available or only that which is directly unsuitable. Suddenly, no scientifically ensured knowledge is required, and well-trying experience is ignored. I myself have been forced to partake in shiatsu treatment and have had my disability pension revoked with no forewarning or instructions for appeal because the administrator incorrectly thought that I hadn't contacted the therapist to make an appointment.

It turned out that the shiatsu treatment aggravated my condition. I was then pressured into participating in a series of sessions with a psychologist in an office I absolutely couldn't tolerate. I contacted a psychotherapist who could make house calls on my own, but the regional social insurance office wouldn't approve of a solution of that kind. Instead, I was encouraged to "find some other kind of rehabilitation measure". Taking walks, which the doctor had recommended, weren't good enough.

These insults and threats from the regional social insurance office every time my disability pension came up for renewal meant that I was in very poor shape psychologically during the first years of my illness. I felt that society didn't approve my right to live, and I constantly entertained notions of suicide. (Letter 10)

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The regional social insurance office withdrew my sickness benefit because electro-hypersensitivity was listed as the diagnosis. On what authority does the medical advisor to the regional social insurance office question the treating doctor without even having met the patient? The reasoning was that electro-hypersensitivity has not been "scientifically proven", and I was left without the help and support that one really needs in this sort of situation. How many illnesses have been scientifically proven? You can still be sick anyway. (Letter 306)

The following letter writer suspects that electro-hypersensitive individuals are sometimes given a diagnosis other than electro-hypersensitivity, and in this way the scope of the problem is obscured:

Since electro-hypersensitivity cannot be listed as the cause of the condition, I am convinced that there is a great deal of electro-hypersensitivity hidden among the reasons given for placing people on sick leave, such as stress, burnout etc. I am (unfortunately) convinced that it won't be possible to deal with the increasing costs for long-term sick leaves if one doesn't first, without preconceived ideas and issues of prestige, make a dynamic research effort with regard to electro-hypersensitivity. (Letter 15)

Even though the majority of electro-hypersensitive persons contracted their illness at work, electro-hypersensitivity is not accepted as an industrial injury:

I have not had my illness classified as an industrial injury even though it is apparent that I became ill at work. I was working 60 percent of fulltime when I became ill. I had small children at home, so my unemployment benefit and sickness benefit are very low. That is why I am very concerned about the future. For example, how will this affect my retirement pension? After all, I haven't worked fulltime since 1982 and probably won't be able to do so in the future either, in this IT society.

Electro-hypersensitivity must be classified as an industrial injury and illness. It has to be given a file number at the regional social insurance office, so that the actual number of those afflicted can be determined. It shouldn't be as is today, when sick leave is given for fatigue, pain in one's joints, headaches, depression, muscle aches or burnout. (Letter 4)

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I reported my electro-hypersensitivity as an industrial injury after having been an instructor in a computer classroom with 15 computers, 4 laser printers, old fluorescent lamps and a tangle of cables. About a month ago, I received a rejection because "a relatively general acceptance of the claim that working with computers, including exposure to computers and electric installations, with a high degree of probability constitutes a injurious factor does not exist".

I haven't decided whether or not to appeal. Is it worth it? (Letter 57)

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The decrease in the number of reported industrial injuries is naturally dependant upon the fact that people know that there is no point in submitting a report. Not until electro-hypersensitivity is approved as an industrial injury. (Letter 65)

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We all know that new appliances always smell funny. Is this necessary? There has been a great deal written about brominated flame retardants. I reported that as being my industrial injury back in 1993, but unfortunately the Supreme Administrative Court decided that I wasn't allowed to try it in the legal system. That was unfortunate, since it was probably the first opportunity for trying it. The journalist who called the Justice of the Supreme Administrative Court who determined that my case was not to be tried was very surprised that he spoke so much about precedent, which she didn't do. Is it possible that it is his fear of creating a precedent that is slowing down our knowledge? That isn't the kind of community governed by law that we should be living in.

When talking about industrial injuries, it is always said that there will be delays and it will take time. I don't understand why. Scientific evidence doesn't always have to be the basis of having an industrial injury approved. This was not always the case for those injuries reported prior to 1993; instead, if there were more factors in favor than there were against, it was to be approved.

I have also been told that it would cost too much. But when I ask what it is that would cost so much, I am not given an answer. It's not a case of the afflicted being awarded an enormous compensation. But you do get security, and you get a sort of confirmation as to what has occurred. That alone makes the whole thing easier to deal with on a purely psychological level.

In addition, it would give people who are not yet afflicted the opportunity, when they feel something at work, of going to a potentially uncooperative employer and saying: Listen here, this will develop into an industrial injury if you don't help fix this! This is positive. Swedish manufacturers could be able to use this in developing new machines. (Statement 13)

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What upsets you the most when you wind up in a situation like mine is not being believed. The afflicted persons should be given all the help they can get. So far, none of the authorities have listened to "little" man. The regional social insurance office has rejected my application for classifying my condition as an industrial injury. (Letter 315)

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I reported my condition as an industrial injury on November 7, 1990 and was rejected. I appealed to the County Administrative Court on November 10, 1992, but withdrew the appeal on the advise of The Confederation of Professional Employees' lawyers and The Swedish National Union of Local Government Officers, who are assembling information in order to request a new appraisal of all cases of industrial injuries pertaining to electro-hypersensitivity and monitor injuries. (Letter 43)

There are many who don't even try to get their electro-hypersensitivity classified as an industrial injury, since they consider it to be futile.

One of my first thoughts was of course to report my condition as an industrial injury. However, I still have not done so. There have been too many who have advised against it. "They will only scrutinize your past to see if they can't make it seem as though you have suffered from some psychological instability", I was told. "Better that you put all your effort into trying to get well. Otherwise, the chance is that you will breakdown completely."

At the beginning I didn't really want to listen to these words of wisdom, but finally became convinced that for my own sake, it was probably best to suffer in silence. (Letter 141)

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I have not reported my electro-hypersensitivity as an industrial injury because I have a number of friends who were treated poorly by Occupational Medicine and the regional social insurance office here in town. They were not believed and were sent to psychiatrists and had their sickness benefits revoked! (Letter 53)

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As yet, I have not reported my symptoms as an industrial injury. I don't see any point to it, since it would never be approved. I have colleagues who have fought with the regional social insurance office, and they say it's like fighting with the devil himself. (Letter 410)

The following letter writer contends that the rights of the electro-hypersensitive are violated because the regional social insurance offices have too much power:

The medical advisor, who has not examined me, *transferred the problem at work* to me by stating "Psychosomatic condition" without taking notice of what the company doctor had written. This initial position is now favorable for the coming process.

The chief medical advisor changed the meaning of "Diagnosis not determined" to my disadvantage. The chief medical advisor goes so far as to *deny* that which the company doctor expressed on several A4 pages.

The regional social insurance office's administrators did not conduct an objective analysis of the industrial injury case, instead they follow up and reinforce the medical advisor's and chief medical advisor's statements. *All to my disadvantage.*

The legal rights for someone with an industrial injury are low or nonexistent, since the regional social insurance offices' administrators are employed by the regional social insurance office, investigate the industrial injury report, submit the report of their findings at The National Government Employee Administration Board's executive meeting, keep the minutes from this meeting and – represent the opposing party! (Letter 196)

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Even though I couldn't stand up, I was constantly forced to participate in work training in very unsuitable of places (heavy and considerable electricity). Afterwards, the regional social insurance office forced me here and there for examinations and courses, and my condition has constantly deteriorated. I was threatened with having my disability pension revoked if I didn't go along with their demands, even though I am a single parent with two children. (Letter 69)

Base stations for mobile telephony are brought up as a threat to the electro-hypersensitive, something that decision-making political institutions disregard. The afflicted wonder where they are to go to avoid having their health seriously impaired when new base stations are being built all over the country:

Ericsson earns billions upon billions on something that makes my wife more and more sick. She has to pay for it with her life! The lack and absence of money for research from the government and industry often depends on the fact that Sweden's improved economy to a large extent depends upon continued development within mobile telephony, the Internet etc. Quite simply, it is too sensitive an issue. Everybody with a little common sense understands the connection.

How do you think it feels when one has to maintain a job, to live, as I previously did with my wife for a year and a half, in a garden shed without water or toilet, with a piss bucket that had to be emptied come rain or shine, get dressed, get ready and go to work? That's not a life, no quality of life. That's just being in storage and a way to survive. To have an electronic monitoring device with an alarm, to be forced to live exclusively in one's home, that is a normal punishment. The life we lived was more than a punishment. We hadn't broken any laws, my wife only had the misfortune of contracting an illness that most people in society show no respect for. Quite simply, she has the wrong kind of illness.

Finally – I wouldn't wish the circumstances that we have been living under on anyone, and for our own sake I hope that no new base stations are built near us, because then our home, which has been our security, will become a form of hell. (Statement 16)

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When our municipal administration was to be computerized in 1992, I was one of those who took the lead in it due to my great interest in new technology. I was one of those who assumed the responsibility of leading the Internet instruction for the other employees. We rented a number of computers, printers, OH plates etc. and got started. After about two months I had to stop, since I had developed a general hypersensitivity to electricity.

Thanks to an extensive EMF-reduction of my home and workplace I was able to keep on working up until the autumn of 1999. But during the years gone by, the air has become filled with more and more “electro-smog“, and my condition has deteriorated along with this. So when Telia erected a cellular tower in the middle of my community, I was no longer able to remain at my workplace (about 200 m from the mast). I was forced to give up my job and go on sick leave.

Is my future to become a disability pensioner at the age of 48? Yes, probably, because where can you find an electricity-free job? How long can I live in the house? What will the next step in the development be?

There are many questions and very few answers.

By what self-evident right do the radio, mobile and other companies fill the airwaves with all kinds of signals? How are we to put an end to this gigantic experiment in which we are all participants, whether we like it or not? How long is this to be allowed to continue without investigating the short and long-term consequences? How many more people will have their futures destroyed?

Give the unbiased researchers generous funding and listen to those of us who are afflicted! Give the human aspects preference above the short-term economic interests! (Letter 335)

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Something that really bothers me is the development within electronics. A few months ago, someone on the radio said that there were now 480 million cellular phone users around the world, and in another year they estimate that figure will go up to a billion. This of course pleases the mobile telephone industry. But I think about the precautionary principle one talks about in Sweden. This is ignored here; instead we have a real full-scale experiment.

As a doctor, I wonder how this effects people in general, that is to say those who are not electro-hypersensitive, and what this development means for the electro-hypersensitive and those who will become electro-hypersensitive.

There is a magazine called USK-Aktuellt, from the Investigation and Statistics Office in Stockholm. In issue no. 4/1998, there are statistics presented showing that between the third and fourth quarter of 1997, the occurrence of sick leaves increased over a period of two weeks from 0.7 percent to 1.1 percent – between two quarters! The increase remained constant during the course of a year and then increased even more. This coincided with the expansion of mobile telephone transmitters in Stockholm after the vacation period of 1997. As far as I know, it did not coincide with any change in the insurance system.

I think there is good cause to do research into how people’s health conditions are affected in an area where a new mobile telephone mast is set up. I know that there are individual members of FEB who have conducted surveys in their neighborhoods and so on, but I think there is cause to conduct these kinds of studies on a larger scale and using proper research methods.

The increasing mobile telephony has changed since I started working with this issue. Cellular phones were not nearly as widespread then. I had patients who could sail on Lake Vänern and find a haven for three weeks, or go out for a walk in the forest. Now we know that wherever one meets another person, it is quite likely that he or she is carrying a cellular phone, which creates a nuisance and at times great danger for my patients.

Where are patients like this to go if mobile telephony keeps on expanding? Low emission zones are something really quite necessary. I also think that it is a shame that fairly “normally” electro-hypersensitive patients have to move time and again. Perhaps one has bought a house, or had one from the start, that has gone through EMF-reduction and where one has found a haven. Suddenly you can’t live there any longer. Afterwards, it’s not easy to find security anywhere else, because you never know where new mobile telephone facilities will be built. (Statement 30)

There has also been mistrust directed toward The Swedish Radiation Protection Authority, SSI, whose assignment is to monitor the radiation people are exposed to:

I would hereby like to call the attention of The Council for Work Life Research to the fact that the institution charged with protecting us from radiation, SSI, does not work the way it should. It may be that my complaint is one of many since I, as a private person, am treated with ignorance and sarcasm from the official authority, SSI. For quite some time I have commented upon the adverse environment with regard to microwaves and radio waves in the municipality I live in. I do not suffer from electro-hypersensitivity in the true sense of the term, but have developed symptoms in my home environment. Since the frequency of cancer, as a number of doctors and I perceive it, is unusually high, it should give cause for the SSI to monitor this. Since SSI has turned the entire responsibility for measuring radio waves/microwaves over to the municipality, the entire issue falls flat. SSI recommends the municipality to engage state-owned Terracom to conduct the measuring. At a meeting in my home, they suggested that there are no masts here, so no measuring needs to be done. There are many operators located within the relevant area: The Swedish Armed Forces, The Swedish Coast Guard, the Defense Research Establishment, air supervision, Stockholm Public Transport Company's communications system and others.

Finally, the measurements done by an independent company (LIBEREL) have established radio waves/microwaves of up to 1000 times "stronger" than reference levels in Solna. A comment from the measurement records states, among other things, that it is like sitting 30-cm. away from a computer 24-hours a day. Most people who have died of cancer or who have cancer in the relevant area developed brain tumors. Other forms of cancer are also prevalent.

If one is unable to turn to SSI in these matters, then there is no channel available for calling attention to the adverse conditions. (Letter 333)

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When is SSI going to start working for a more humane society, or is it considered acceptable that people are forced out into the wilderness to escape the plague of microwaves? Isn't it time to start applying the *mast-refugee's tested experience* and the *precautionary principle* instead of waiting for research to come up with a "scientific" answer to a difficult question? We may all be sick by then. (Letter 249)

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In today's Sweden, there is a large number of individuals who state that electromagnetic radiation causes them problems. The healthcare system does not give them any help – quite the contrary! Nor do they receive help from any other institution. They cannot seek refuge anywhere, because there is no place left in Sweden where there is no risk of exposure. They are not even told where greater or lesser radiation levels of a certain frequency are located, or even what basis the responsible authority, SSI, has for claiming that there is no risk. The facts clearly seem to support the opposite.

In Stalin's Soviet Union, undesirables were punished by exile to the Gulag Archipelago. Not even that opportunity is offered in Sweden. (Letter 11)

Criticism has been expressed over the fact that SSI has not been given the resources to procure measuring equipment to measure radiation from mobile telephony and instead has to allow the companies who put up the masts conduct the measuring themselves:

We wrote to the Environment and Health Protection Board and demanded an answer as to what was transmitted from the mast and requested that an impartial measuring of the radiation intensity be conducted. We also demanded that steps be taken to reduce the radiation or see to it that the mast was moved.

The reply came that Telia had installed a GSM transmitter in the mast. We stuck to our demand for an impartial measurement and informed them that Liberel could conduct the measurement at a cost of SEK 12,000. We also demanded information regarding the origins of the building permit for the old mast. We later received the answer that no building permit was required when the old mast was constructed. We have not received an exact account as to what is transmitted, and the Environment and Health Protection Board has sent the matter on to the Radiation Protection Institute for an opinion.

Then the power company, who is also a partner in the mast, came along with a representative for the Environment and Health Protection Board to measure. My husband was at home at the time. They didn't register any elevated values where I sleep, and when I returned home in the afternoon I noticed that the interference was gone. Something was done to the mast before the measurements. I informed the Environment and Health Protection Board of this. Telia of course denied that they were involved in any sort of deception. The Radiation Protection Institute says that they do not have the resources to conduct measuring and instead refer to the mobile telephone companies. It's very convenient when you get to check up on yourself! (Letter 377)

References are made to UN and EU conventions that Sweden has signed:

From the UN's declaration about human rights: "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing, medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control."

The consensus in Sweden is that everyone has the right to the elementary necessities of life. What is forgotten is that one group of citizens, the electro-hypersensitive, are excluded from this.

The right of electro-hypersensitive individuals to basic security is not a question related to research but rather one of politics, a position regarding what constitutes an acceptable standard of living for this group of citizens. The need for access to housing, food, medical care, a livelihood etc. cannot be postponed to a future in which scientific evidence for electro-hypersensitivity has been obtained. As to whether this is a handicap or entails living in a situation of outright distress is governed by political decisions. Achieving full accessibility to society for the electro-hypersensitive is not easy. Satisfying the need for elementary basic security is, on the other hand, completely possible on a practical level, often at a fairly moderate cost. It is a question of a political decision. (Letter 191)

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For the handicapped, Sweden is a leading country - housing, elevators, sidewalks, store entranceways and so on - everything is adapted to a wheelchair. But the electro-hypersensitive do not even have a free zone. For example, I'm not protected in my own home, where according to my human rights as per the UN and the EU, one is to have the right to avoid the influences of the immediate surroundings.

When it comes to mad cow disease, which has not affected or killed anyone in Sweden, the import of meat was quickly prohibited (the government) *in case* someone were to get sick. When it comes to mobile telephony/base stations, which they *know* makes people sick, they allow radiation 24-hours a day without sufficient research. They happily spread digital TV all across Sweden without first knowing the effects of this new radiation. (Letter 215)

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It is my opinion that granting building permits for high frequency pulsed transmissions, which results in forcing disabled individuals from their handicapped-adapted homes, is a violation of [WHO] Agenda 21's stipulated precautionary principle, the UN's declaration concerning human rights and the code of standards for disabled individual's participation and equality in society. The government violates the above agreements unflinchingly, for one reason alone: money. The profit of the telecommunications companies is more important than people's health.

The psychological and physical torture of the electro-hypersensitive that is taking place does not faze the powers that be. Psychological torture also affects relatives when they are forced to watch the degradation that healthcare, particularly in the field the psychology, and the authorities expose the electro-hypersensitive to, as well as the physical torment the electronics industry causes without any ethical or moral considerations whatsoever. Those electro-hypersensitive individuals who have managed to acquire a home with low EMFs, and so have created a tolerable existence, are now threatened by physical suffering once more from the high frequency pulsed (digital) mobile telephone transmissions that the telecom companies are allowed to send from masts, house roofs and facades.

In fascist countries around the world, people are persecuted, tortured and killed for political or ethical reasons. In democratic Sweden, sick people are treated the same way on account of economic profit. The establishment and the electronics industry defend their actions by saying that there is no scientific evidence that people are affected by electromagnetic fields. This is not true. At a symposium in Vienna in 1998, researchers from Europe, the USA and New Zealand established that the biological effect of low intensity exposure to electromagnetic fields is a scientifically proven fact⁵³.

How many people have to get sick before there is a stop and a demand made upon the electronics industry that before their products are sold, it has to be proven that they pose no danger to people, animals and vegetation? (Letter 50)

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A few months ago, Sweden hosted a conference about the Holocaust. This was very commendable, but at the same time that Sweden beat its own drum and declared how much they despised Hitler's Germany actions in the extermination of the Jews and other groups that they considered to be inferior, like the handicapped, the Swedish government is involved in the same deplorable dealings as Nazi Germany, namely a large scale experiment with people – the expansion of mobile telephony, for example.

When is the UN going to arrange a conference dealing with the holocaust for all those whom the IT society, in the true spirit of a stock market frenzy, have destroyed? It has already begun, people have already died.

I think that we should protest the whole thing and see to it that free zones are established in which we can live and reside like normal, healthy people. (Statement 14)

A long series of letters demand that the so—called precautionary principle in the environmental code be followed with regard to microwave radiation and other electromagnetic radiation:

What has happened to the precautionary principle? There is an overabundance of research indicating that laboratory animals are affected by radiation, microwaves etc. How can one disregard the precautionary principle without checking to see if man is affected or not? If the precautionary principle were used the way it was intended, a lot of people would not develop electro-hypersensitivity with all the tragedy for the individual and the costs for society it involves. Surely it can't be that big business with all its lobbyists is so strong that it takes chances with the general population? The government has allowed mobile telephone masts despite the protests of the people living close by in quite a few cases.

The precautionary principle as it is applied today is one big joke. We are rapidly heading for a disaster. (Letter 381)

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My freedom of movement has been limited through the increased use of cellular phones and other cordless telephones at workplaces and in the nearby vicinity. It is more difficult to make use of the municipal transportation system with the new buses, commuter trains and subway cars with modern electronics and through the unlimited use of cellular phones. Base stations for mobile telephony are permitted close to buildings. At home, computers connected to the Internet via telephone modems are used, which means that both the power network and the telephone network are contaminated by high frequency signals, impossible to do away with and difficult to shield.

I believe that the authorities must immediately get involved in this environment and health issue, and seriously endorse the intentions of the so-called precautionary principle. (Letter 199)

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Start using the precautionary principle now! I send my plea for help to National Chemicals Inspectorate, the National Housing Board, the National Institute of Radiation Protection and those in charge of dental care at the National Board of Health and Welfare, to name a few.

⁵³ The exact words (from the 1998 Vienna EMF-Resolution) are: "The participants agreed that biological effects from low-intensity exposures are scientifically established."

Today there is a great deal of collected information about the possible risks that is withheld from the general public. Because of this, we citizens and consumers can suddenly become patients. How many people, for example, know that the computer the children got for Christmas was supposed be “burned off” for two weeks in a well-ventilated room to reduce the amount of toxic chemicals in it? How does a single mother in her three-room apartment do this? Shouldn’t the manufacturer have taken care of this burning off?

When will we get rid of construction materials such as chipboards, pressure-creosoted wood and mineral wool that can be damaged by dampness and emit toxic amounts of phenolic resins?

When will we be given information about the radiation value of computers and cellular phones so that we avoid finding out about these matters in the evening papers?

When will there be a warning about distance provided on the clock radio and the transformer to the new bedside lamp – sources of magnetic fields that we shouldn’t have close to our heads when we sleep?

When will there be dental material with a declaration of ingredients so that we can determine whether we have had mercury, lead, cadmium, titanium dioxide, phenols or sulfa permanently fitted in our mouths?

I would like some quick answers and actions. (Statement 1)

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When it comes to new technology, such as mobile telephone transmitters and cordless phones, the precautionary principle must be used, i.e. to refrain from the technology in the event of suspected side effects, even if the proof is incomplete. In the same way, the environmental code must be followed. This means that the burden of proof should be reversed, i.e. that it must be proven to be harmless. (Letter 147)

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The government has a great deal of responsibility in making sure that products in regular use in society are not hazardous to one’s health. The precautionary principle is often referred to in this context, and the authorities must take their responsibility in applying it with more stringent threshold values, or else prohibiting products that are hazardous to one’s health. The companies manufacturing the products in question will never cooperate in this, instead they will naturally protest as loudly as they can. This is the reason why the precautionary principle has taken on a completely different significance than it originally had: before you are completely sure and everyone is in agreement that a product is hazardous, it cannot be prohibited.

Consequently, a consensus is required for anything to happen and more concern is given to the company’s financial situation than people’s health. Alarming research reports are disregarded until there are more of them than there are of those that fail to show negative health effects. It can take a long time, in part because research funding to a great extent is not granted to unpopular researchers (either from the government or from private sources), and in part because it is so easy to produce research results that don’t show negative effects, while successful attempts require much more careful planning and careful execution. (Letter 58)

The following letter writer criticizes social institutions at all levels, from the Government to the County Administrative Board, the Administrative Court Of Appeal, The Environmental Court of Appeal and the municipalities for not following the precautionary principle:

The environmental code applies to non-ionized radiation. It contains the precautionary principle, which states that caution shall be maintained as soon as there is reason to suspect that a business or an activity can lead to injury or become a nuisance to people’s health. The location principle states such a place is to be chosen so that the purpose can be achieved with the least amount of nuisance for people’s health.

On June 3, 1999, the Government decided not to rescind the approved building permit for mobile telephone masts in close proximity to the densely populated communities of Våse and Hovsta. The Government did not justify its decision. For example, there is no explanation of the Government’s view of the fact that the appeal came from persons who explained that living close to mobile telephone transmitters made them sick. Accordingly, the Government’s decision cannot be used as a precedent for other cases.

Borgholm's municipality decided not to take any action in the case of a request to close down a mobile telephone transmitter. On March 15, 1999 the County Administrative Board rejected the appeal on the following grounds: "At the site of your home, the radiation level... is at least 10,000 times lower than 5 meters from the source of the radiation, where the radiation level is already below the threshold level. Therefore it is the opinion of the County Administrative Board that the disturbance to you at your home is insignificant." Accordingly, the decision is based upon the (as indicated above, incorrect) supposition that the threshold level is relevant in determining whether the transmitter can cause a private nuisance for the plaintiff. On December 7, 1999 the Environmental Court of Appeal endorsed the County Administrative Board's ruling by not granting a leave to appeal.

The mobile telephone companies in Sweden have an annual turn over of around SEK 10 billion, of which one third to one half is profit.

According to SSI, the economic investment in Sweden during the last ten-year period for research into the biological effects of non-ionized radiation amount to SEK 10-15 million annually.

On January 27, 1999 Norrköpings Tidningar stated that SSI would prefer to have the resources so that they, as an independent party, could check to see that the mobile telephone companies actually follow the recommendations. Accordingly, it is too expensive to have one single inspector who measures the radiation level of, for example, antennas for mobile telephony mounted on the facades of buildings. (Letter 188)

And so a statement in which Sweden is compared to other countries regarding the way the authorities deal with people's concern about the health risks from electromagnetic fields and chemicals:

In the USA, there is at present a relatively large market for electrically and chemically "clean" homes. There are communities comprised solely of severely chemically sensitive individuals, living in ceramic houses. It is estimated that there are around 15-20 million people who are sensitive to chemicals, but only a few percent are seriously sensitive. So far, the electro-hypersensitive comprise only 2 percent of the population in the USA, i.e. about 5.36 million people.

A couple of years ago, Stockholm's County Council Environmental Department arrived at the same figures, i.e. 2 percent of the inhabitants of Stockholm's County consider themselves to be sensitive to electric and magnetic fields. If the same percentage were afflicted in all of the EU, it would amount to 7.42 million people. If you then assume that all of these individuals have at least two family members, it means that 20 million people are affected.

Can this really be correct? Yes, perhaps. It is definitely certain that the problem is not limited to the Scandinavian countries. There are many very active associations for victims of electro-smog in Europe. In addition, there are hundreds of groups of citizens opposed to mobile telephone masts in such countries as Germany, Switzerland and Austria.

More cellular phones have been sold in Italy than in any other European country. This may not be so odd, since Italy is telecom-giant Ericsson's second largest market. It is no coincidence that the suggestion in the EU to reduce the threshold level for microwave radiation came from Italy and that a statutory limitation for the total exposure to magnetic fields was introduced. It is probably no coincidence either that the problem was discussed in the media, and that in a debate film from 1999, Italian parents claimed that their children had contracted cancer from cellular phones. When I somewhat suspiciously wondered how they could have developed cancer so quickly – cellular phones haven't been around for that many years – the woman in the health food store who had told me about the film answered that it wasn't strange at all, since children are much more sensitive.

Public awareness is fairly extensive throughout Europe. The frequency of masts is probably not as great in Spain, since some of our Swedish microwave refugees are in hiding there. Yesterday, the Spanish newspaper La Verdad wrote about the people's "mast hysterics". Not a day goes by that the Ministry of Health doesn't receive letters from citizens or organizations that are interested in the effects radiation from mobile masts may have. People in various areas of the country sell their homes because of health concerns due to the proximity of a base station. So what do the authorities do? They have appointed an investigation - an investigation containing experts! And according to the newspaper, the report, planned in association with WHO, is "aimed at calming the population".

Half of those in the American compilation felt that they also suffered from chemical sensitivity. Otherwise, the most common cause of the illness was felt to be exposure to fields or microwaves. There are those who became ill in connection with X-rays or magnetic resonance scans, others after exposure to chemicals or after an operation.

With regard to electro-hypersensitivity and microwave refugees, I have the feeling that nobody wants to assume any responsibility. The issue is shuffled back and forth and finally winds up at government level, despite the fact that the decision should be made at the lowest possible level in accordance with EU's principle of subsidiarity. They probably feel they don't have enough details, that there isn't any evidence.

No one seems to be aware that unambiguous evidence and a scientific consensus are no longer required in order to take action. You don't need to wait until dead people are lined up in the streets; instead, the precautionary principle should be applied as soon as there is the suspicion of negative side effects. The EU Commission adopted its own version in February.

In addition, Sweden, along with many other countries, has signed a large number of conventions and treaties that approve the precautionary principle in all situations where there is uncertainty regarding a phenomenon's or product's effect upon the environment and health. It is no longer the responsibility of the user or the individual to produce evidence that something is hazardous. Nor is a consensus within research necessary in order for something to be prohibited or for measures to be taken. The burden of proof, i.e. to prove that a phenomenon is not hazardous, now lies upon whoever introduces new technology. (Statement 3)

In several statements, criticism is directed at the Council for Work Life Research, RALF, since their investigation seems to be aimed at playing down the risks of electromagnetic radiation. However, a few letter writers are optimistic regarding RALF's work:

I think that this investigation into electro-hypersensitivity is very welcome. I can't come to Stockholm, that's why I wrote this letter. (Letter 203)

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It is my hope that the hearing and investigation into electro-hypersensitivity will lead to a better understanding for the problems faced by the electro-hypersensitive and to aid and improve their presence in society. (Letter 274)

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I have a lot of expectations for your investigation into electro-hypersensitivity. (Letter 18)

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First of all I would like to express my appreciation of the fact that you treat this question in an open and serious manner. (Letter 220)

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In 1989 I became electro-hypersensitive after several years intensive work with computers. Eleven years have passed and nothing has happened to improve the situation for the electro-hypersensitive. Researchers have claimed that there is no scientific evidence for our condition. This means that an unparalleled discrimination is accepted on the labor market and in society in general. People who are severely ill are left unaided and face a constant struggle to survive. Private lives and finances are destroyed. Many are forced to accept a psychological diagnosis in order to take sick leave and receive a disability pension.

Denying a particular group of people their legal rights is not worthy of a democratic country.

I now expect that the goal of the Council for Work Life Research be to facilitate the electro-hypersensitive in obtaining the help they are entitled to and the chance to survive. (Letter 42)

However, the majority of letters are critical. RALF's objectivity is questioned:

If the investigators employed by the government lack credibility and the integrity the assignment requires, their entire operation becomes untenable. One cannot consider individual issues; the entire process must be questioned. To participate in Telia's scientific committee and still continue with their government assignment, as Bergqvist/Hillert have done, is untenable. It is remarkable that these persons themselves haven't realized that they should be disqualified. Does this indicate a laxity of ethics in general within these circles? Through their actions, they have upset the entire assignment. (Letter 346)

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Nowadays, RALF's official statements are based upon lies instead of facts, and go hand in hand with industry instead of looking out for the employees. (Letter 205)

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The appointment of experts for the assignment has probably been carried out in the same way many researchers choose test subjects: you choose those who you think will verify a desired result. (Statement 14)

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In the past couple of years, electro-hypersensitivity has gone from being mainly a problem related to the work environment to a problem related to the social environment. The enormous increase in the use of microwaves, primarily in the expansion of mobile telephony, has had serious consequences for the electro-hypersensitive in recent years.

Those with severe electro-hypersensitivity who managed relatively well in the Stockholm area after performing EMF-reduction of their houses have now been forced to flee from their homes. FEB has many members living in trailers and isolated cottages. Some have even left the country.

Persons who previously managed to continue working have now been forced to take sick leave. Two of FEB's members are forbidden to visit their workplaces for reasons of health! Persons who a few years ago could get around the Stockholm area with no major problem have a hard time today with such things as public transportation. This in part because the electric environment in the new subway cars and buses is worse than in the old ones, and in part because of other passengers' cellular phones and all the mobile telephone transmitters.

FEB has a steady influx of new members. More and more people also develop problems with airplanes. Airplanes can be felt several minutes before they are seen; accordingly, it cannot be a question of anything other than the effect of microwaves from airplanes' various radar and/or communications systems. The symptoms are also the same as from cellular phones and mobile transmitters, DECT telephones etc., i.e. headaches, dizziness, nausea, disorders of heart and breathing rhythms etc. Getting too close to a transmitting cellular phone or the like can even cause the most severely afflicted to lose consciousness.

All of these reactions can be found in previous research into microwaves. There are also studies that prove that long-term exposure increases sensitivity. This is why it is extremely serious that RALF has not conducted a thorough survey of the current state of research.

By neglecting to bring up those research results that actually indicate health effects and risks, RALF contributes to people being injured and forced to become refugees in their own country or even having to leave Sweden. (Letter 358)

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At the hearing held at the reorganization of the Swedish Work Environment Fund for the Council for Work Life Research, RALF, there was a great deal of turbulence, mistrust was open and discussions about disqualification loud. A large amount of taxpayer's money had been misappropriated by a small exclusive club that conducted directed and deplorably inadequate investigations for the purpose of confirming the lack of danger from electric and magnetic fields. This central group never intended to engage in research in the true meaning of the word, but rather an arranged falsification of science.

An essential demand from a large number of electro-hypersensitive individuals is that the Council for Work Life Research be immediately relieved of its government assignment regarding electro-hypersensitivity and that the government appoint an impartial, credible investigation. This sort of investigation could be led by the Council for Planning and Coordination of Research (FRN), with very capable researchers such as Leif Salford, Bertil Persson and Arne Brun from Lund⁵⁴, L. Hardell, G Lindström and K. Hanson-Mild from Örebro and Umeå as well as Olle Johansson from the Karolinska Institute, Solna.

Nor should one forget that even if medical science with all its shortcomings can not explain the concept of electro-hypersensitivity in all its detail, there is a long series of other illness and syndromes that can't be explained any better, even though the symptoms can sometimes be alleviated reasonably well empirically. For the electro-hypersensitive, a basic requirement is an environment free from electric and magnetic alternating fields and radio frequency fields. In addition, knowledge is beginning to accumulate today concerning real medical cures even for the severely electro-hypersensitive. That knowledge will not be found within the Council for Work Life Research. (Letter 348)

The following letter from the electro-hypersensitive' own organization, FEB, responds to a few points from one of RALF's reports:

FEB's Board of Directors has decided to present the following positions and to point out the following errors in the report "Electro-hypersensitivity – knowledge and experience " published by the Council for Work Life Research, written by Ulf Bergqvist, Elisabeth Birke and Lena Hillert.

The Council claims: The problem with electro-hypersensitivity has not increased during that last couple of years, with reference to the number of members in FEB and a reduction in the number of occupational injuries.

FEB's comments: The influx of new members between 1995-1998 was 1021 persons. In the environmental health survey -97, Stockholm's County Council reported 1.5 %, 19,000 persons, were electro-hypersensitive. There are a large number of unreported cases. In the report "Electro-hypersensitivity among The Confederation of Professional Employees (TCO) members", TCO estimates the number of electro-hypersensitive persons within the TCO collective to 10-30,000.

The Council claims: EMF-reduction does not help the afflicted.

FEB's comments: We have many members for whom the EMF-reduction of premises and equipment at work are necessary in order for the person in question to be able to continue working. We would like to repeat that EMF-reduction measures are a prerequisite in order to have the chance to keep working. In its Message Letter from August 30, 1996, the National Housing Board presents a follow-up from 19 EMF-reduction efforts. It shows that the measures lead to positive effects in 18 cases, i.e. everyone that answered. The National Housing Board has published four pamphlets that describe EMF-reduction.

The Council wants to differentiate between skin conditions and light sensitivity as one separate problem and electro-hypersensitivity as another.

FEB's comments: electro-hypersensitivity often begins with skin conditions, after which light sensitivity and heat sensitivity are added. Logically, the entire non-ionized spectrum should therefore be seen as a triggering factor for the electro-hypersensitive person's symptoms. (Letter 206)

Finally, a few letters that list some requests for various measures to assist the electro-hypersensitive in being able to participate in social life:

Measures that should be taken:

- Doctors should receive training regarding electro-hypersensitivity.

⁵⁴ All are full professors at the University of Lund.

- An attempt should be made to try to avoid rehabilitating those on sick leave back to jobs they cannot tolerate. There is a great risk that their condition will deteriorate.
- Persons with nowhere to live after fleeing from their homes must receive society's assistance in finding housing they can tolerate.
- Hospitals must have low emission wards so that electro-hypersensitive individuals can go to the hospital when necessary.
- Electro-hypersensitive individuals need access to the transportation service for the disabled with cars that they can tolerate.
- The extensive expansion of mobile telephone masts must be questioned and areas with low radiation levels from masts should be established.
- Cellular phone-free sections should be established on trains and buses.
- Obtaining an allowance for home equipment should be facilitated; it is available in some municipalities but not in others. The assessments must be consistent.
- More research in the field. (Letter 383)

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Suggestion for actions:

- Follow the precautionary principle.
- Do not approve new permits for base stations.
- Rescind old permits (compare with Zurich and Winterthur in Switzerland)
- Check the clinical picture around the masts after a certain amount of time in operation.
- Investigate the role of cellular phones/base stations in the modern lack of energy illnesses.
- Listen to researchers whose funding is now being cancelled because their findings go against mobile telephone manufacturers and operators. (Letter 249)

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Suggestions for changes in society besides a better working environment with suppressed electricity:

- EMF-reduction of compartments/sections on trains /buses/streetcars/subways. During the worst period of my illness, I could neither travel to my husband 400 kilometers away nor talk to him on the phone.
- EMF-reduction of rooms at emergency wards (having to wait 7-8 hours on behalf of oneself or a relative is a catastrophe for the electro-hypersensitive). And also low-EMF visiting-rooms at hospitals as well as treatment rooms. What happens if I get sick and need hospital care?
- Nursing homes and homes for the elderly for electro-hypersensitive persons.
- Referral to alternative treatment for those things traditional healthcare cannot cope with. Or naturally in the long run the integration of these forms of treatment with healthcare. (Letter 342)

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I believe that I speak on behalf of all electro-hypersensitive people when I request the following:

- A ban on cellular phones in all public institutions and on public transportation.
- The replacement of fluorescent lamps and low-energy lamps with normal light bulbs in public environments. The former have a detrimental effect on everyone, but they make electro-hypersensitive individuals outright sick and they cannot stay in areas where such are found.
- A stop for new construction and the expansion of masts. Use buried, shielded cables wherever possible.
- A better opportunity for those of us suffering from electro-hypersensitivity to participate in professional life. (Letter 40)

Afterword

In December 2000, the Council for Work Life Research (RALF) submitted its final report, “Electro-hypersensitivity and the health risks from electric and magnetic fields. A survey and evaluation of research“, to the government. Of the 117 pages contained in the report, only slightly more than one page was devoted to the 33 statements presented at the hearing on March 8, 2000 and the 415 letters sent to RALF. The material was considered to be of limited value, and we quote from page 108:

“The contribution to the hearing covered a wide range of issues, since those participating could freely choose what to focus on. It is therefore not possible to reach any conclusions pertaining to the occurrence and typical array of symptoms regarding electro-hypersensitivity based upon this documentation.”