

Subject: Olle Johansson
Today's research is the reality of tomorrow

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This article shows that participatory democracy in Sweden may be a thing of the past.

An interview with researcher Olle Johansson on the health risks of electromagnetic frequencies Arbetsmiljöupplysningen. April 10, 2006
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Today's Research is Tomorrow's Reality

Research shows that electromagnetic radiation from modern devices like cellphones have a much greater effect on humans than what we are lead to believe. Even a dose considerably lower than the recommended safety level can be dangerous.

Olle Johansson at the Karolinska Institute in Stockholm is the head of the Unit for Experimental Dermatology at Department of Neuroscience. As a professor in cell biology, histology and neurobiology, his present employment is within basal and clinical neuroscience.

There was a time when we did not understand that radioactivity from radium, uranium and plutonium as well as medical x-rays and the ultraviolet rays from the sun could actually harm us, even kill us. Unwittingly, there were x-ray machines in children's shoe stores in the late 40s to depict the right the right fit for the child. Older generations remember the popular fluorescent radioactive watches from the 50s. At about the same time scientists began to understand that the wonderful warming rays of the sun can injure our cells or their DNA and may lead to skin cancer. Today we hear warnings that even UVA, the weakest ultra-violet light, may be harmful to especially children with fair skin and blond hair, Olle explains as he compares today's attitudes to electromagnetic radiation. Tomorrow, when we have the answers, we will be questioning our reasoning today and why we exposed ourselves to such risks.

Olle Johansson has collaborated on over 500 research and scientific reports, review articles and book contributions and published them in journals like Science and Nature. His did his doctor's thesis in medicine at the world-renowned Karolinska Institute.

Olle explains:

- I have participated in more than 300 conferences and symposia as a speaker, a lecturer, and in another hundred events as an invited participant. My research has also been made available to the public through extensive media exposure both nationally and internationally -in newspapers, magazines, radio and television as well as internet.

Olle Johansson is a distinguished and well-respected expert when it comes to discerning the complexities on how we are affected by electromagnetic radiation. He has warned the public countless times about the risks from the types of radiation we are exposed to daily. Because of this involvement he has at times been called a 'cellphone adversary'.

I do not oppose cellphones, but to the total exposure of the whole population, around the clock wherever we are, with the type of microwave oven radiation that has been proven to seriously injure and damage cells. Even at exposure levels as low as 100,000 times below today's recommended safety level, he says.

Magnetic fields is a cancer risk, equal to DDT

In the summer of 2001, twenty-one of the most renowned researchers met in Lyon, France. After having reviewed all their reports published on electrical and magnetic fields and cancer, they concluded that low frequency magnetic fields should be classified as a possible cancer risk. Listed in this group, 2B, are also substances like gasoline and diesel fumes, welding vapours, chloroform, lead and DDT.

Health effects from exposure

Swedish and international research clearly states that high frequency radio and microwaves from cellphones affect cells and tissue in both laboratory animals and humans. The first discovery on humans was first reported by Professor Johansson and described the levels between 5,000 and 25,000 times below the safety standard of 2W/kg. Since then researchers have repeatedly come to similar conclusions, even revealing results of 20 uW/kg, meaning 100,000 times (!) below this 'safety level'.

This safety level is determined in collaboration with the industry, which is absurd. It is like allowing the chips manufacturer to decide how much fat is healthy for the consumer, Olle says.

No scientific evidence has determined that wireless technology is 'safe' because it radiates less than 2 Watt/kg. In this debate it is sometimes discernable that the safety levels only refer to the thermal effects (heat). This has no relevance for scientific discussions concerning human health today. The values are based on research disclosing the behaviour and eye damage on monkeys, and the control group was a plastic doll filled with liquid with no attempts to make valid conclusions on actual local heating.

Similar to the ignorance of x-rays and radioactivity

Generally speaking, there is a myth that a certain type of radiation (or a chemical substance) is harmless because it is below a certain level. History has revealed several times that this is not true, Olle says. He compares this issue with the discussions on UVC, x-rays and radioactivity. Scientists used to declare them as harmless, while today they are regarded as highly destructive.

Instead it is important to emphasize that we cannot assume that humans have their own natural physical protection against these high-frequency signals. With other words, it is unlikely that this technology make us readily adapt to a life in a microwave environment, he concludes.

Nothing today clearly states that the low and high frequency signals we now discuss are totally harmless, only that the risks have not been scientifically proven. It is a myth to preclude that the lack of 'objective findings' is the same as lack of negative health effects, Olle points out.

None of these myths have scientific support, but are often used as loose references in the public debate. It is quite the opposite - there is a risk that it is a risk, emphasizes Olle Johansson.

Electrosensitivity is not a psychological condition

Olle and his collaborator Peng-Yue Liu proved several years ago a considerable increase in mast cells in the skin of people with the functional impairment electrosensitivity compared with healthy individuals in the control group (it has since been determined that these cause allergies and the beginning of cancer). The research also showed that the mast cells on healthy individuals were affected in front of television and computer screens.

Based on these findings, my colleague Shabnam Gangi and I concluded on a 'mast cell hypothesis' in two scientific reports. Since that time, my own hypothesis is that electrosensitivity is a form of radiation injury. The changes I have observed are very much in congruence with those caused by injury from UV light and ionizing radiation.

A very aggressive critique from certain 'opponents' have been that such changes on people with electrohypersensitivity (or healthy controls!) cannot in any way depend on the effects from electromagnetic fields and/or air-borne chemicals. They must depend on psychological and psychiatric personality disturbances or such things as cognitive malfunction.

That's why we quite recently carried out a series of studies to decide if mast cells from the skin and the thyroid of laboratory rats were susceptible to extremely low-frequent electromagnetic fields. Two of the studies are now published. In

summary, it shows that both the number and the volume of type A mast cells in the thyroid had increased significantly in the exposed group of rats, unlike the control group which was not exposed to radiation. Clearly the results we achieved in this animal model cannot be interpreted as psychological and psychiatric behavioural disturbances or cognitive malfunction. They solely depend on the exposure to electromagnetic radiation, Olle concludes.

Now we want to continue to research the effects of the microwaves from wireless technology, but we have not managed to get funding for this type of study. Maybe nobody wants to know...., he queries.

Labour unions take initiatives

Olle Johansson believes that TCO, SIF and other Swedish labour unions have treated this issue with utmost respect. For example, TCO Development (an independent testing company) has also taken the initiative to generate various ecological labels for the office environment with various equipment, computer screens and cellphones. However, nobody knows for sure if a certain type of radiation is harmless just because it rates under a certain level.

We will likely see these recommended values gradually decreased to lower levels in the future. I am sure that the labour unions will be very important instigators in this process, Olle says.

Sweden's safety levels are high compared to other countries

Other countries like Italy, the U.S. and France have lower safety levels than Sweden. It is truly remarkable that we do not have the same levels as these nations. Olle agrees.

It is quite baffling, and I have no better answer than a personal speculation: Are Swedes more resistant to radiation? Are we like Radiation Vikings? Or are the authorities in other countries, the governments and the parliaments, more prone to act out of responsibility to their citizens and their public health concerns? I bet my money on the latter.

Warnings for digital cordless phones

Olle considers the increasingly popular digital cordless phones to be very harmful. They are called DECT phones in Europe. Their base radiates continuously, and that is why the only acceptable advice I have is to return to the old-fashioned landline phones. When you use them you will not be any dumber or sound worse because they have a cord attached!

Future historians will wonder why nothing was done

Olle also elucidated how he is constantly asked if it is possible to guarantee no harm from cellphones, computer screens, high-frequency fluorescents and travel on commuter trains, considering the health of future generations.

The answer to this question is that nobody can guarantee this to 100%. On the contrary, we risk an admission that there was considerable knowledge, but that we ignored to prevent it. The world may be moving unremittingly towards tragic times, and historians may very well raise the question - why was nothing done in time? These reflections are especially grave when we factor in possible long-term effects like cancer from low and/or high frequency signals. From what we know today, we will not be able to claim that we did not know or did not understand.

Olle uses the new commuter trains in Stockholm as an example.

Studies show that the exposure to 0.2-0.4 mikrotesla increases the risk for childhood leukemia. The new trains radiate 100 times more. His exposure should be included in a risk assessment, especially if someone spends a few hours a day on these commuter trains.

I pray to the Higher Powers that the hundreds, maybe even thousands, of research studies are wrong about the biological and health effects. Hopefully the opposition is right, but statistically speaking this possibility is extremely slim, he continues.

Marie Curie had a bowl of liquid plutonium on her desk. Before we knew the risks of x-rays, people worked without protection in x-ray rooms. Less than 15 years ago the big push for cellphones and computers started. We wonder about the similarities. Does Olle think that people in the future will consider today's generations as 'crazy' while working without protection and allowing themselves to get radiated?

Absolutely! The risk we take is that we will finally have to admit what we knew all along, but still did not take action to prevent the health risks in time.

What you say is quite remarkable. We can only wonder why these facts are not more known.

I totally agree with you. It is puzzling that this type of information is not spread to the public continuously.

A need for ground-breaking action

If you work in an office and sit in front of a computer screen, you are likely exposed by several sources. What advice does Olle give to find out more about the risks and how to minimize them?

I would start by researching available information material. TCO Development has a lot of good advice. As always, it is a question of personal responsibility. We should also ask ourselves some simple questions: Do I have use the computer for

everything? Do I have to be constantly accessible by cellphone? Do my children have to play video games, surf the Internet and talk on the cellphone or the digital cordless phone all day? Do I have to use an electrical toothbrush? Is it important to whip the cream with an electrical beater?

We need to understand that we, or our children, will simply not become a new Einstein or a new Shakespeare just because we buy a new computer with more memory or a new digital cordless phone with a colour screen. If you want to become a new Einstein or a new Shakespeare, there are other fundamental values that need to be prioritized.

It sounds as if it is imperative that people change their behaviour in more aspects than one to avoid exposures to excessive and damaging radiation. The choice may be to eliminate something we regard as necessary.

I am not sure that we humans can change our behaviour that easily, but we need clear messages from our authorities, governments and politicians. The simple fact remains, nothing earth-shattering will happen if we do not use these devices. They are not necessary to sustain life like clean water, clean air, good food, love, respect and humility. If we are able to produce tomorrow's more humane green technology, we would all win, especially from a socio-economic point of view. What will change our behaviour is more knowledge, and acts of responsibility based on this knowledge, concludes Olle Johansson.

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