

Report on a U.S. Senate Hearing in Washington D.C. on September 14, 2009

Franz Adlkofer

The U.S. Senate hearing on potential health effects from cell phone radiation for humans was suggested by Devra Davis, a professor at Pittsburgh University. It was to bring to the attention of the Senate the imbalance between the health-relevant interests of the public and the economic interests of the communications industry. In her bestseller *The Secret History of the War on Cancer*¹, Devra Davis did convincingly describe how during the last hundred years national and international companies, usually with open or hidden support from politics, succeeded in many areas to push through their free-enterprise ideas at the costs of the public by distorting the respective developments in scientific research. In that way, millions of people worldwide did experience harm to life and limb. The Senate hearing was to prevent that this happens again in the area of cell phone communication, which one obviously has to fear in regard of how the concerned industry dealt with science and research so far. By the way, a similar hearing on this question did already take place thirty years ago, without any consequences up to now.

The hearing with the title *Health Effects of Cell Phone Use* on September 14, 2009, was the highlight of an international conference² in Washington D.C. at which most recent results of scientific research in the area of cell phone communication were presented. As the conference threatened to fail at the last minute due to lack of funds, the German non-profit organisation *Kompetenzinitiative e.V.* agreed at short notice to raise the outstanding funds. The political initiator of the hearing, contacted in this matter by Devra Davis, was Senator Arlen Specter from Pennsylvania, who himself survived a brain tumour. The hearing was carried out under the chair of Senator Tom Harkin from Iowa, who took over the chair of the Standing Committee on Health, Education, Labor, and Pensions from the late Senator Ted Kennedy. The course of the hearing is documented in a webcast, and the files with the scientists' testimonies are available for download³.

The most important statements of the sworn experts

Siegal Sadetzki, Director of the Cancer and Radiation Epidemiology Unit at the Gertner Institute in Israel, did summarize the results of her epidemiological investigations within the INTERPHONE study, which she carried out in Israel, as follows:

In the study an increased risk of brain tumours was observed, namely

- among long-term users (>10 years)
- on that side of the head on which the cell phone was used
- among heavy users of cell phones
- especially among users from rural areas

These results are fully in line with what can be biologically expected, therefore, they are plausible. The warning signals should not be ignored. However, the observations are not sufficient proof for the causality of a connection. But the obtained results clearly speak in favour of applying the precautionary principle.

¹ Davis D (2007) *The Secret History of the War on Cancer*. Basic Books, New York. ISBN-13: 978-0-465-01566-2

² Cell Phones and Health: Is There a Brain Cancer Connection? Washington D.C., September 13-15, 2009.
<http://environmentalhealthtrust.org/node/284>

³ U.S. Senate Committee on Appropriations (2009) Testimony from Hearing on Health Effects of Cell Phone Use.
<http://appropriations.senate.gov/ht-labor.cfm?method=hearings.view&id=15611855-77a8-49f2-bbda-e23a5a5653a3>

John Bucher, Associate Director of the National Toxicology Program (NTP) at the National Institutes of Environmental Health Sciences (NIEHS), did state the following:

According to the NTP the weight of the current scientific evidence is not sufficient to link cell phone use with any health problems. Therefore, the NTP as well as other national and international organisations are of the opinion that more sound research results are needed until a risk for humans can be derived.

The NTP is currently conducting an extensive study in rats and mice to find out if in animal experiments cell phone radiation causes cancer or other health effects. The study which will cost more than USD 20 millions is conducted in three phases:

- A pilot study to fix the highest field strength that still does not lead to a raise in body temperature. This study is to be completed in November 2009.
- A sub-chronic toxicology study where the animals are exposed to various sub-thermal field strengths for one month. This is to check if any abnormalities come up in the animals.
- A 24-months chronic toxicology and carcinogenicity study aimed to find out if radiation can cause cancer or other chronic diseases.

Further research with the question whether or not electromagnetic fields are well-tolerated by humans is supported by the National Institute of Health (NIH), the National Cancer Institute (NCI), and the NIEHS. Moreover, the NIEHS supports an international project studying whether or not exposure to cell phones in childhood causes malfunctions in behaviour and growth. The cohort for the study consists of over 100,000 Danish children born between 1996 and 2007, with data gathered on cell phone use.

Dariusz Leszczynski, Research Professor at the Radiation and Nuclear Safety Authority (STUK) in Finland, gives his opinion, referring mainly to the results he obtained within the REFLEX study, as follows:

The most important research aim is to find out whether or not cell phone radiation induces biological effects while applying an intensity still allowed by the current safety limits. To either confirm or refute this is of utmost importance because health effects are not possible when one can exclude biological effects.

Up to now, results show that cell phone radiation activates the cellular stress response in human endothelial cells, cells that are lining blood vessels, and, thus, change the cell physiology. If a health risk for humans can be derived from these intracellular processes is still unknown.

The International Committee on Electromagnetic Safety (ICES), the International Commission on Non-Ionizing Radiation Protection (ICNIRP), and the WHO assure the public that health effects from electromagnetic fields (EMF) are not proven and that the current safety limits protect all of us from any adverse effects. However, based on the current knowledge one can dispute whether or not the situation is indeed that clear. Regarding the present scientific uncertainty, the claim that cell phone radiation can be regarded safe comes at least too early. The current safety limits cannot be called reliable because we lack studies on volunteers and children as well as studies investigating the long-term effects of cell phone radiation.

Linda Erdreich, Senior Managing Scientist with Exponent Health Sciences, a company being also a consultant of the Cellular Telephone Industries Association (CTIA), gives her opinion as follows:

Current scientific evidence does not show that high-frequency electromagnetic fields (HF-EMF) can be made responsible for cancer or other health effects in humans. At least, fifty years of research did not produce any proof that HF-EMF can cause cancer.

Devra Lee Davis, Professor at Pittsburgh University and organizer of the Washington conference, summarizes her considerations as follows:

Studies having been financed by industry showed at the most part negative results, while studies with independent support and covering a longer period rather tended to positive results.

Fact is that the U.S. Federal Communications Commission (FCC) sets standards based on models of a man's head, a man weighing 200-pounds. However, what few parents know is that radiation reaches much more deeply into children's smaller heads with thinner skulls than assumed with this model.

Furthermore, fact is that the FCC does not employ one single health expert. Their standards are based on advice given by outside experts, numerous of them working for the cell phone industry. Unlike drugs which are thoroughly checked by the Food and Drug Administration (FDA) before use, this administration does not have the authority to check the standards for cell phones. This would only be possible when there is evidence that a cell phone does indeed release hazardous radiation.

We demand

- Warning labels on cell phones (no cell phone for children under 16 years of age; do not keep cell phones on the body, do texting instead of talking)
- Support of independent research without influence from industry
- Support of independent research by an extra fee of USD 1 on cell phones for three years

Olga V. Naidenko, Senior Scientist in the Environmental Working Group (EWG), does state for her organization:

From the scientific knowledge the EWG concludes that the current U.S. cell phone radiation standards fixed by the FCC and based on recommendations by the mobile communications industry in 1992 are outdated. They allow 20 times (children up to 40 times) more radiation to the head than the amount allowed for the rest of the body. The EWG recommends to the government to invest more in the research on health effects of mobile communication – this especially in regard of children and adolescents. The public has the right to know what levels of radiation they are exposed to, what potential risks they have to expect, and what precautionary principles they can take to protect themselves and their families from potential adverse effects of the cell phone.

Senator Arlen Specter did summarize his impressions as follows:

'Let me state what was the outcome for me We do not know the answer yet Precautionary measures are not a bad idea. But maybe they are not really a good idea, but in any case they are not a bad one. And the problem with children is something we should look at more closely We have the duty to do more for the protection of our children. The question, I think, is to find out what sort of additional studies are needed.'

Senator Tom Harkin finally stated:

'I think this was very interesting and challenging and I can assure you that we will pursue the whole thing. ... I will pursue this matter beyond this hearing together with the NIH.'

In the following interview he gave his opinion as follows:

'I am reminded of this Nation's experience with cigarettes. Decades passed between the first warnings about smoking tobacco and the final, definitive conclusion that cigarettes cause lung cancer.'

Comment by Franz Adlkofer

When Senator Harkin keeps his promise a period in the U.S. – a country in which after World War II research and development reached in nearly all areas the highest peak worldwide - will end that widely ignored the biological effects of electromagnetic fields and the consequences following for humans. For decades the concerned industry succeeded in applying the numerous technological potentials of electromagnetic fields without giving rise to the suspicion that a health risk for the people might accompany this. With the fully unproven statement that there are – besides the biological effects of increased tissue temperature that can be prevented by fixing safety limits - no further biological effects of electromagnetic fields, as this would

contradict the laws of physics, any research below the safety limits was declared ridiculous. Independent scientists not sticking to this rule were deprived of funds. That is why first progress in knowledge was achieved in other parts of the world, first in Russia followed by Europe and finally China. Conclusions from this still poor state of knowledge were presented at this U.S. Senate hearing. It remains to hope that the U.S. with its overwhelming scientific possibilities takes care of this topic still covered with great uncertainty and that as soon as possible one finds out in what sort of adventure mankind is involved by harnessing electromagnetic fields. The rest of the world would follow this example.