

# **Adverse Health Effects from the Operation of Digital Broadcast Television Stations (DVB-T)**

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## **OPEN LETTER**

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**To the President of the United States of America**

**To the Citizens of the United States of America**

**To the Members of the House of Representatives**

**To the Members of the Senate**

Dear President Obama:

Dear Members of the House of Representatives:

Dear Members of the Senate:

Dear Citizens of the United States of America

In the US, digital broadcast television is scheduled to start operating on February 17, 2009. We write to you today because we wish to save you from the significant negative health consequences that have occurred here in Germany. In Germany, analog broadcast television stations have gradually been switching to digital broadcast signals since 2003. This switchover first took place in metropolitan areas. In those areas, however, the RF exposures in public places as well as at home continued to increase at the same time. As a result, the continuing declining health status of children, adolescents, and adults in urban areas could not be attributed to any single cause. On May 20, 2006, two digital broadcast television stations went on the air in the Hessian Rhoe area (Heidelstein, Kreuzberg), which until recently had enjoyed rather low mobile phone radiation exposure levels. Within a radius of more than 20 km, the following symptoms that occurred abruptly were reported: constant headaches, pressure in the head, drowsiness, sleep problems, inability to think clearly, forgetfulness, nervous tensions, irritability, tightness in the chest, rapid heartbeat, shortness of breath, depressive mood, total apathy, loss of empathy, burning skin, inner burning, leg weakness, pain in the limbs, stabbing pain in various organs, weight increase.

Birds had fled the area. Cats had turned phlegmatic and hardly ever went into the garden. One child committed suicide; a second child tried doing it. Over time the same unbearable symptoms showed up in other locations—most recently in Bamberg and Aschaffenburg on November 25, 2008. Physicians accompanied affected people to areas where there was no DVB-T reception (valleys, behind mountain ranges) and witnessed how these people became symptom-free only after a short period of time.

The respective agencies responsible in Germany were approached for help, but they declined to follow up on the strongly suggestive evidence in the actual locations. The behavior of the government agencies disregards the fundamental rights of affected people guaranteed in the German Constitution.

In Germany, DVB-T (Digital Video Broadcasting Terrestrial) uses Orthogonal Frequency Division Multiplex Modulation. The fundamental principle of this type of modulation works by spreading the information across several thousand carrier frequencies directly adjacent to each other. A channel is 7.8 MHz wide. The amplitude also changes constantly. The WHO, the German Radiation Protection Commission, and the German Federal Ministry of the Environment rely on the Guidelines for Limiting Exposure to Time-varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz), (Health Physics 74 (4): 494-522; 1998) published by the International Commission on Non-Ionizing Radiation Protection (ICNIRP). In this document, it says: p. 495: "These guidelines will be periodically revised and updated as advances are made in identifying the adverse health effects of time-varying electric, magnetic, and electromagnetic fields." p. 507: "Interpretation of several observed biological effects of AM electromagnetic fields is further complicated by the apparent existence of "windows" of response in both the power density and frequency domains.

There are no accepted models that adequately explain this phenomenon, which challenges the traditional concept of a monotonic relationship between the field intensity and the severity of the resulting biological effects.” Why are the German agencies in charge not willing to help identify the adverse health effects? Since immediately, after digital broadcast television stations had started transmitting, adverse health effects have occurred, the review of the Guidelines announced by the ICNIRP is imperative. Obviously, there are response windows contained within the broad frequency bands with their several thousand frequencies that change constantly and whose amplitude also changes constantly. The ICNIRP had already pointed out this possibility.

In 1992, Dipl.-Ing. Rüdiger Matthes, member of ICNIRP and of the German Radiation Protection Agency (BfS), emphasized the preliminary status of the exposure limits in a hearing on the health risks of electromagnetic radiation: “...They (electromagnetic exposure levels) are several orders of magnitude higher than the natural background radiation levels of nontechnical sources...In parallel to this development, findings of scientific studies according to which long-term exposure to such fields may trigger adverse health effects keep accumulating....In this context, it is also important to recognize that there are large differences in exposure levels within a given population. A small child, for example, absorbs much more RF energy than an adult person...There are several findings on low-level exposures, which are considered scientifically validated because they have been reproduced often but which are rather difficult to interpret.

The impact of mostly pulsed or ELF modulated RF radiation on cell metabolism, for example, counts among them. It has been observed that the efflux of certain ions (e.g. calcium) from a cell increases during exposure to such fields. The occurrence of this effect is described almost completely independent of the actual field strength. It can be found at extremely low absorption levels...With all the currently available scientific findings, there remain some crucial questions unanswered. ...There are gaps in the so-called body of evidence. That means that the biological effects, for example, have only been investigated for individual frequencies. Data (e.g. effect thresholds) on the various biological effects across the entire frequency spectrum are not available.

The exposure limits, therefore, are based on an approach that greatly simplifies the very complex reality whose details are unfathomable. It should also be noted that concrete data on possible effects of long-term exposures are mostly lacking.” Real life teaches us that it was wrong to simplify. In Germany, we see strong evidence of a direct temporal association between the start-up of terrestrial digital broadcast television and the occurrence of severe health symptoms. Dr.-Ing. W. Volkrodt, former R&D engineer at Siemens, recognized the danger of electromagnetic fields for humans, animals, and plants. He pinned his hopes on policymakers who would listen to reason when he wrote in 1987: “Future historians will refer to the RF dilemma during the period from around 1975 to 1990 as a short, time-limited ‘technical incident.’ Owing to the introduction of fiber optic technology, this incident could be remediated quickly and effectively.” Satellites and cable provide the US population with television services. By contrast, the risk associated with terrestrial digital broadcast television transmitters is unacceptable.

We, therefore, ask you, dear Mr. President, who has the wellbeing of his citizens at heart, to stop the scheduled introduction of this new technology in the United States of America and to save the people from the negative health consequences that have occurred in our country.

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