

Long term EMF studies on humans

As early as the 1950s and 1960s, researchers in the Soviet Union conducted scientifically designed long-term studies of people who were exposed to electric or magnetic fields or radio and microwave radiation (EMF) in their work. In these studies, participants were followed for up to 10 years, and in some cases, 20 years.

In the West, no studies have been conducted in which people were studied for such a long period of time. This makes the Soviet studies unique as a basis for assessing the long-term effects of EMF.

The long-term studies show that the single most important factor for adverse health effects of both radio and microwave radiation, as well as electric and magnetic fields, is time¹. Changes in the body's functioning first occur after 3 to 5 years, and as symptoms intensify, sensitivity also increases².

The characteristic cluster of symptoms known as "microwave syndrome" includes:

- Disorders of the autonomic nervous system
- Neuroses
- Depression
- Daytime fatigue
- Lack of energy
- Sleep problems
- Headaches
- Various cardiovascular problems
- Hyperactivity and inner restlessness

Inner restlessness is the body's own restlessness and not a matter of worrying about something. Many of the symptoms of microwave syndrome are subjective; that is, the diagnosis is based on the individual's own perception.

However, researchers also found many objectively confirmed symptoms:

- Asthenia (fatigue, getting tired easily), neurotic symptoms
- EEG changes
- Sleep disturbances
- Circadian rhythm disturbances
- Disorders of the hormone-producing system consisting of the hypothalamus, pituitary gland, and adrenal cortex
- Low blood pressure; less commonly, high blood pressure; slow or rapid heart rate
- Changes in the autonomic nervous system's regulation of the heart and blood vessels
- Hyperthyroidism
- Erectile dysfunction (difficulty achieving or maintaining an erection)
- Digestive disorders
- Slower sensorimotor function (impaired dexterity)
- Resting tremor in the fingers (slow tremors in the fingers when at rest)
- Hair loss
- Tinnitus (ringing in the ears)
- Increased susceptibility to infection

Knowledge about the effects of EMF on humans was not acquired solely through research. Everyone who worked at power plants, in substations, with radio transmitters, at radar facilities, at airports, in the electronics industry, and with electrical engineering was required by law to undergo a medical examination at least once a year. In total, this involved tens of thousands of people.

How this knowledge reached the West

Through several conferences on the effects of microwaves during the 1950s and 1960s, it was no secret what the Russians—as well as the Czechs and Poles—were doing behind the Iron Curtain, but there was no comprehensive description. This was not provided until the German Bundesministerium für Telekommunikation commissioned Professor Karl Hecht and Dr. Hans-Ulrich Balzer to conduct a study. Their review of Russian-language research on the biological effects of radio and microwave radiation, as well as electric and magnetic fields (Hecht & Balzer 1997), is based on 1,500 reports, 878 of which are scientific papers from the years 1960–1996.

Immediately after it was submitted, the report disappeared into the ministry's archives and was neither presented to the Minister of the Environment nor made public. A new report had to be written based on the collected material, and it is that version that is now available on the Internet (see footnotes).

Karl Hecht has given a lecture in the Bavarian State Parliament on the Russian research findings and the discussions that have been ongoing in the West since the 1950s. The presentation, which is in German, forms the basis for this page. Professor Karl Hecht received his medical training at Humboldt University, where he subsequently worked from 1955 to 1991; he has published over 750 scientific articles and supervised 131 doctoral students³.

Microwave Illness

The body does not function normally due to radio or microwave radiation.

Footnotes

1. [Hecht & Balzer 1997](#). Biological Effects of Electromagnetic Fields in the Frequency Range 0–3 GHz on Humans. A Review of Russian Literature from 1960–1996. p. 43.
2. Zinaida Vasilevna Gordon, Biological Effects of Microwaves in Occupational Hygiene. Published for the National Aeronautics and Space Administration and the National Science Foundation, Washington, D.C., by the Israel Program for Scientific Translations, 1970. NASA TT F-633. Published in Russian in 1966 by the Academy of Medical Sciences of the USSR.
3. Karl Hecht [biography](#).

Source: The Environmental Association Vågbrytaren (In English: The Wavebreaker) <https://vagbrytaren.se/forskning/langtidsstudier/index.html>

Glossary

Microwave Syndrome

A syndrome is a characteristic set of symptoms that points to a specific diagnosis or cause.