# Scientific Testing for Wireless Wifi in Germany

In October 2007, I traveled to Germany to undergo scientific testing for electrohypersensitivity (EHS) at Umweltphysikalische Messungen GbR in Wiesenthal. The research is conducted by Dr. Lebrecht von Klitzing, a medical physicist, in collaboration with Dipl. Ing. Susanne Gunther, a medical and biomedical technician. They have been collaborating since 2002 and began conducting clinical research at the testing laboratory in Wiesenthal in 2004.

The small village of Wiesenthal is nestled in a beautiful valley, which provides good radio shielding from cell towers. The municipality has decided that the village should be a low-radiation zone and that no cell towers will be permitted within the village itself.

In the individual exposure tests conducted, reactions to a wireless network (Wifi) are recorded by measuring heart rate variability (HRV) [1], the skin's electrical potential, and microcirculation in the finest blood vessels (capillaries). The measurements are recorded by a computer, and the test subject does not know when the exposure begins or ends, which is why the test can be considered double-blind.

In 2017, the Institut Umweltphysikalische Messungen GbR tested more than 300 people, of whom approximately 30% were assessed as primarily electrosensitive, while the rest had other primary conditions and their electrosensitivity could be considered secondary. Of the test subjects, 90% were from Germany, and according to Dr. von Klitzing, it was estimated at that time that 5–10% of Germany's population was electrohypersensitive.

The research at the institute is conducted with great rigor. Electromagnetic levels in the local environment are low. Test subjects are not tested on the day of arrival, as exposure during the trip there could affect the results. Overnight accommodations are therefore available in an electrically decontaminated house to ensure proper recovery before the test. In addition, the test facilities are shielded from external electromagnetic fields and waves to ensure completely reliable results. This is a sound scientific approach that differs entirely from the quality of the provocation tests relied upon by the Swedish Radiation Safety Authority (SSM).

Dr. von Klitzing was formerly the head of the Department of Clinical Research at the University of Lübeck.

In the early 1980s, he worked on testing the effects of electromagnetic fields on humans and began to take an interest in pulsed fields.

When the GSM mobile phone system was rolled out, he conducted numerous experiments and discovered that EHS is a real problem. Among other things, he measured brain activity using EEG and points out that it is easy to make many mistakes in such tests. The signal from a DECT phone is visible on the EEG and must therefore be eliminated, which requires special equipment.

In addition, of course, all other fields must be eliminated.

"Changes were still visible on the EEG after three days in one of the people I tested," says von Klitzing.

He also believes that the heart rate variability (HRV) of an electrohypersensitive person can be affected within 5 minutes, but that recovery can take a very long time.

The institute's research forms the basis for the scientific report *Hypothesis on how to measure electromagnetic hypersensitivity, (Tungler and von Klitzing)*, which was published in 2013.

## Test of My Reaction to a Wifi Router

The exposure time to the radio signal from the router was 12 minutes. Already after 6 minutes of exposure, HRV showed that the heart rate was affected by the wifi radiation. After the wifi signal was turned off, HRV remained reduced. Microcirculation also deteriorated

during the study phase. The test clearly shows that the wifi signal causes massive disruption to the biological system.

The output power from the wifi router was approximately **10 µW/m²** (microwatts per square meter).

The limit value (reference value) for this type of radio wave is **10,000,000 µW/m²** in Sweden. My symptoms thus arose at a radiation level of **one millionth of the Swedish limit**.

The symptoms that arose during wifi exposure and persisted afterward were:

Intense tinnitus, the sound of a pulse in my ears, a burning sensation in my heart, severe, concentrated pain in my heart, headache, muscle cramps in the neck and shoulders leading to neck pain, sweating, nausea, unsteadiness and dizziness, mild chills, a burning sensation on the left side of the face (closest to the source of exposure), blurred vision, confusion, difficulty reading and understanding the content, belching, low mood, and insatiable hunger.

The severe pain in the heart, the headache, and profuse sweating persisted even during the following night.

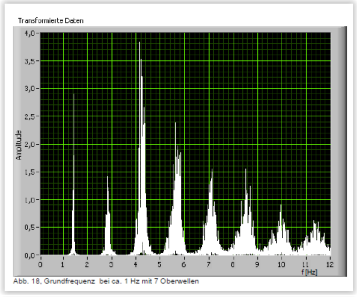


Abb. 18. Grundfrequenz bei ca. 1 Hz mit 7 Oberwellen

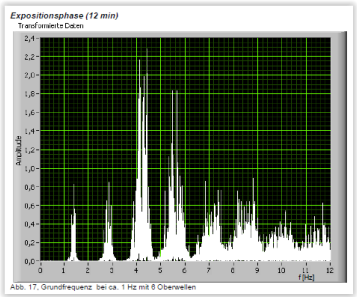


Abb. 17. Grundfrequenz bei ca. 1 Hz mit 6 Oberwellen

## Excerpt from the test protocol for Ann Rosenqvist, October 2007

### Heart Rate Variability (HRV)

During the initial check and throughout the exposure period, the HRV waveform shows six upper waves, of which the fifth and sixth are no longer distinct *(Figure 17)*. –>

After the Wi-Fi was turned off, HRV decreased significantly: The upper waves increased *(Figure 18)*. –>

Even after just 6 minutes of exposure, the mean values and bandwidth of HRV show a clear change compared to the resting phase. The peak value of the arithmetic mean increases with exposure time; that is, even after just 6 minutes of exposure, the organism can no longer fully compensate for the wifi stimulation. After wifi exposure ceases, HRV remains restricted. The bandwidth widens only gradually; the mean value is still represented by a sharp “peak.” The wifi signal causes massive disruption to the biosystem.

### Microcirculation

While the microcirculatory rhythm (approx. 0.15 Hz) was faintly visible during the first resting phase, it could not be clearly detected during the test phase.

*Ann Rosenqvist*

[1] Mark Kovacs, PhD, FACSM, CSCS, a performance physiologist with over 20 years of applied research and field experience in exercise physiology: “*HRV is a reflection of the autonomic nervous system, the body’s fight-or-flight response.”*