Healthy disorders by WLAN-exposure

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Background

WLAN (wireless local area network; resp. WiFi) is used as an important worldwide communication-technique. By this always there is an exposure by 10 Hz-modulated electromagnetic fields. In contrast to the ICNIRP-safety guidelines, whereby no bioeffect is possible by these low-energetic electromagnetic fields, we found artificial signals in the nervous and cardiovascular system by WLAN-exposure.

Method

The relaxed patients were tested in an HF-shielded lab under following experimental setup:

Step 1: control
Step 2: active WLAN-router
Step 3: control after exposure

Each epoch was about 9 min, the electromagnetic immission by WLAN at the head was about 25-30 µW/m². EMG was sampled by a special electrode matrix fixed at the lower arm skin, ECG-recording at ICR-4-position. The data were sampled continuously by a LabView-System with following frequency analysis (FFT). The test person has no information of WLAN “on/off”. It was tested, that there is no interference with the analyzing system during active WLAN.

R Patient (A)
(with clinical diagnosis “burn-out”)
About 30 h after WLAN-exposure during office-activity there is a 10 Hz-artifact in EMG-signal (Figure 1a). By a following WLAN-exposure this artifact disappeared after about 3 min. As well during following exposure and subsequent control this 10 Hz-artifact was not to detect. One day later the whole test-program was repeated with the same artifacts in EMG. These data point to a remembrance effect in EMG by exposures in low-frequent-electromagnetic fields.

**Patient (B)**

(unwellness by longtime “home-office”)

During WLAN-exposure in this case there was not found any influence on EMG but there are ECG-events pointing to a threatening cardiovascular problem by this electromagnetic field.
Conclusions

The influences in EMG during and after WLAN-exposure are obviously depending of the individual biosystem as demonstrated by the different data. That means: there is no uniform effect on biosystem by WLAN-exposure. But by these demonstrated effects there must be a discussion about the consequence of artificial signals in the nervous system with following interactions of biofunctions, e.g. in cardiovascular system.

The demonstrated data point to the necessity for a new discussion about healthy effects by low-energetic electromagnetic exposures. That especially under the background of longtime WLAN-exposure in “home-office” or in schools by “digital-learning”. The precautions by ICNIRP-guidelines are not relevant.