GSM base stations: Short-term effects on well-being.

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BACKGROUND

The purpose of this study was to examine the effects of short-term GSM (Global System for Mobile Communications) cellular phone base station RF-EMF (radiofrequency electromagnetic fields) exposure on psychological symptoms

- good mood
- alertness
- calmness

as measured by a standardized well-being questionnaire.

METHODS

Fifty-seven participants were selected and randomly assigned to one of three different exposure scenarios.

Each of those scenarios subjected participants to five 50-min exposure sessions, with only the first four relevant for the study of psychological symptoms.

Three exposure levels were created by shielding devices in a field laboratory, which could be installed or removed during the breaks between sessions such that double-blinded conditions prevailed.

The overall median power flux densities were :

- 5.2 microW/m² (0,04 V/m) during "low" (L)
- 153.6 microW/m² (0,24 V/m) during "medium" (M)
- and 2126.8 microW/m² (0,90 V/m) during "high" exposure sessions. (H)

For scenario HM and MH, the first and third sessions were "low" exposure.

- The second session was "high" and the fourth was "medium" in scenario HM (HM = LHLM)
- and vice versa for scenario MH (MH = LMLH)

Scenario LL had four successive "low" exposure sessions constituting the reference condition. (LL=LLLL)

RESULTS

Participants in scenarios HM and MH (high and medium exposure) were significantly calmer during those sessions than participants in scenario LL (low exposure throughout) (P = 0.042).

However, no significant differences between exposure scenarios in the "good mood" or "alertness" factors were obtained.

CONCLUSION

We conclude that short-term exposure to GSM base station signals may have an impact on well-being by reducing psychological arousal.