

This is an overview of all epidemiologic and provocative research concerning human well-being and health in the vicinity of masts for GSM and UMTS (3G) mobile communication. **The object of the research are living humans.** This overview does not contain in vitro or in vivo (animals) laboratory research, because they do not give a consistent picture of what happens to people who are exposed permanently to pulsed radiofrequency radiation.

All the epidemiologic and provocative research with living humans find negative effects, from unacceptable sleep disturbances to serious illness and disablement. Therefore, the conclusion can only be: it is irresponsible to place phone masts in the vicinity of places where people live and work. Note that wireless communication systems like DECT, WLAN, WIFI and TETRA principally generate the same kind of pulsed radiofrequency radiation as GSM and UMTS (3G), so the approval of these systems for use in the vicinity of people is irresponsible as well. The second conclusion is, the current exposure limits are much too high. The values of the research are from 100 microWatt/m² to a few thousand microWatt/m² (0,2 V/m to 1 V/m). The limits advised by bodies like ICNIRP, NRPB and the Dutch Health Council are about 10.000.000 microWatt/m². They protect only from the effects of overheating, not from the impact on well-being and health.

- [1] Bortkiewicz A, Zmyslony M, Szyjkowska A, Gadzicka E (2004),
Subjective symptoms reported by people living in the vicinity of cellular phone base stations,
Med Pr. 2004; 55 (4):345-51

People living in the vicinity of base stations report various complaints mostly of the circulatory system, but also of sleep disturbances, irritability, depression, blurred vision, concentration difficulties, nausea, lack of appetite, headache and vertigo. The performed studies showed the relationship between the incidence of individual symptoms, the level of exposure, and the distance between a residential area and a base station. This association was observed in both groups of persons, those who linked their complaints with the presence of the base station and those who did not notice such a relation.

- [2] Wolf R M.D., Wolf D M.D. (2004),
Increased incidence of cancer near a cellphone transmitter station,
International Journal of Cancer Prevention, vol. 1, nr. 2, April 2004.

The study indicates an association between increased incidence of cancer and living in proximity to a cell-phone transmitter station.

- [3] Eger H, Hagen K U, Lucas B, Vogel P, Voit H (2004),
Einfluss der räumlichen Nähe von Mobilfunkseanlagen auf die Krebsinzidenz,
Umwelt-Medizin-Gesellschaft, 17. Jahrgang, Ausgabe 4/2004, S. 273-356

In the years 1999 until 2004, after five and more years of use of the phone mast, the risk of malignant blastoma for the people in the vicinity of the phone mast was three time the risk for the people living far away.

- [4] Navarro E A, Segura J, Portoles M, Comez-Perretta C (2003),
The Microwave Syndrome: A Preliminary Study in Spain,
Electromagnetic Biology and Medicine, Vol. 22, Issue 2, 2003

The present results demonstrate a significant correlation between several symptoms of what is called microwave sickness and the microwave power density associated with the Base Station located on a hill at the edge of the town. Symptoms and signs include headache, fatigue, irritability, loss of appetite, sleepiness, difficulties in concentration or memory, depression, and emotional instability.

- [5] Santini R, Seigne M, Bonhomme-Faivre L (2002),
Investigations on the health of people living near mobile telephone relay stations: Incidence according to distance and sex,
Pathol Biol (Paris), 2002 Jul; 50(6):369-73

Comparisons of complaints frequencies in relation with distance from base station and sex, show significant ($p < 0.05$) increase as compared to people living > 300 m or not exposed to base station, till 300 m for tiredness, 200 m for headache, sleep disturbance, discomfort, etc. 100 m for irritability, depression, loss of memory, dizziness, libido decrease, etc. Women significantly more often than men ($p < 0.05$) complained of headache, nausea, loss of appetite, sleep disturbance, depression, discomfort and visual perturbations.

- [6] Hutter H P, Moshanner H, Kundi M (2002),
Mobile phone base stations: effects on health and well-being,
Kostarakis P. Rhodes: *Workshop*, p. 344-352.

Problems of heart and blood circulation relate to measured densities, significant for people with and without fear for phone masts.

- [7] Germann, P (2004),
Einfluss der Mobilfunkbelastung auf die Retikulocytenreifung,
vorläufige Bewertung anhand von 1000 Analysen. Juli 2004.

Blood was drawn from 1018 persons before a GSM mobile phone base station was installed and once again 6 to 12 months after it was turned on. Significant changes in the blood have been observed.

- [8] Oberfeld G, Navarro A E, Portoles M, Maestu C, Gomez Perretta C (2004),
The microwave syndrome - further aspects of a Spanish study,
presented at an International Conference in Kos (Greece), 2004

This study found significant ill-health effects in those living in the vicinity of two GSM mobile phone base stations. The strongest five associations found are depressive tendency, fatigue, sleeping disorder, difficulty in concentration and cardiovascular problems. Based on the data of this study the advice would be to strive for levels not higher than 0.02 V/m for the sum total, which is equal to a power density of 0.0001 $\mu\text{W}/\text{cm}^2$ or 1 $\mu\text{W}/\text{m}^2$, which is the indoor exposure value for GSM base stations proposed on empirical evidence by the Public Health Office of the Government of Salzburg in 2002.

- [9] Zwamborn A P M, Vossen S H J A, Van Leersum B J A M, Ouwens M A, Makel W N.
(2003), **Effects of Global Communication System radiofrequency fields on Well-Being and Cognitive Functions of human subjects with and without subjective complaints.**
Netherlands Organisation for Applied Scientific Research (TNO) FEL-03-C148 (2003).

In two groups (hypersensitive and non-hypersensitive subjects) exposure to UMTS had a negative influence on well-being in both groups. Cognitive function was consistently affected in both groups exposed to GSM and UMTS.

- [10] Oberfeld G, Schimke H, Bernatzky G (2005),
Strahlung von Mobilfunksende-Anlagen beeinflusst Gehirinströme.
Not published yet.

The radiation of a cell phone base station at a distance of 80 metres causes significant changes of the electrical currents in the brains of testees (measured by electroencefalogram, EEG). All the testees said they felt unwell during the radiation, some of them seriously.