

How much electro pollution can the human tolerate ?

11 000 citizen initiatives already joined together nationwide in order to fight against the rapid extending of the cellular phone network installations in Germany. Already now, the day has over 100 million cell-phone conversation minutes in Germany so far. However how big are the dangers real? Dr. Günter Baumgart spoke for BIO with the medical physicist Dr. von Klitzing.

An spooky fog is in the air. Nobody can see or can smell him, but it becomes denser in rapid speed, and it could be that he one day completely "takes the breath": Electro pollution, industries, households, communication networks - without electricity our modern life became unthinkable. We live in a mix of their fields.

Everywhere transmitters shoot from the ground, roofs are planted with cellular phone network installations. There are 50 000 already in our country. In the next 10 years, it will almost be 100 000. An electromagnetic drumfire, which the ones dismisses as harmless, of which however others warn urgently. Danger or hysteria ? Here the conversation with the expert.

BIO: Mr. Dr. von Klitzing, can we yet withdraw us from all this electro stress?

Dr. von Klitzing: Welfare barely, above all in the consideration on the mobile radio network not. Here, we almost became all to involuntary test persons of a area-wide field trial.

BIO: Are there then before introduction of the mobile radio network not sufficient providing security researches ?

Dr. von Klitzing: Just not, herein lies the scandal. And he carries forward now with the super- rapid UMTS (Universal Mobile Telecommunication system). The industry has had promised before the license auction yet to run basic researches to the biological compatibility. This would have been responsible.

But nothing happened. In the pharmaceuticals industry each medication must go through many steps of testing, before it comes in the market. This lasts years. With the cell phones, one believed to be able to do it without it. The users immediately were allowed to jump in "cold waters" of possible damages.

BIO: The mobile phone information center, IZMF, however calms concerned callers: after the "present condition of the science" neither goes out of a danger from the transmitters nor from the cell phones...

Dr. von Klitzing: This statement simply is not correct. I even mean, it is knowingly wrong. To the one, there are not any long time studies to the biological effects of mobile radio. There can be none at all until now. To the other, one ignores or withholds short those scientific data, the biological effects of mobile radio waves, which are already proved also below the present-day limit values with short time expositions in the minute area.

This happens even on EU-level where one let realizations of a Swedish researcher group already two years ago fell under the table, which means, that even short-term cell-phone emissions increase the permeability of the blood brain barrier which is a quite problematic effect.

BIO: According however to IZMF the majority of all relating to this scientific examinations gives all-clear. By what one is based oneself then there ?

Dr. von Klitzing: Essentially on studies, that are sponsored by the industry. However, interests always take influence on the research concepts and with it also on the results. Furthermore, these examinations, on which one refers, have a general weakness: Their objects are cells or cell agglomerations, not however complete organisms.

We people however simply are no cell accumulations, but high-complicated bio systems. Our body-internal communication network, beginning from the communications between brain and organs until to the endocellular processes, is realized by means of electric fields or electromagnetic waves not only

through the relatively slow chemistry, but above all through super-fast contacts. On these connection lines very often even permanent now meets the most different technical interfering field.

BIO: One reads occasionally, the inner communication system of our body is amazingly stable.

Dr. von Klitzing: Maybe is it this of the coherence characteristics of his electromagnetic waves. Maybe however it is not this either! Although we explored this in no way, we impose excessively much to this system.

As is generally known with magnetic 50 hertz fields of more than 1 micro teslas, screens begins to "dance", one drew just the border at this mark for electromagnetic disturbing sources in office rooms. Concerning the human being, however, a 100-fold limit is held officially for compliant.

Nothing new also is that cell phones must be turned off in intensive care units of clinics and in airplanes during start and landing because the electronics could be brought out of the step. Our biological information routes, that are however far more sensitive than every modern technology, should be disturbing steady across from foreign signals ?!

BIO: Anyhow in attempts with cell cultures it was determined, that the energy of our commercial portable phones is not by far sufficient in order to shatter for example the DNA, in which the genetic information is stored.

Dr. von Klitzing: Yes, that is correct. However, it means not much. Such attempts are viewing merely the quasi mechanical effect onto the chromosomes, not however the impairment on other biological processes. For example those of the new synthesis of the genetic material, the entire cell division, the repair courses and the metabolism processes in the cells.

Similarly, the things lies at the judgment of the thermal effect. All is only spinning around the heat effect of the energy entry of the radio radiation. However, it is quite low and therefore really unproblematic. The biological effects however remains in the darkness. I hold this for very dangerous.

There is even until after date not any plausible action model for electromagnetic influences on bio systems. And attempts with bacterias or viruses bring us hardly closer to this model.

BIO: Is it possible to prove - as often claimed - a direct causal connection between cancer and electro smog ?

Dr. von Klitzing: No, at least not yet in every individual case. We get however more and more frequently signalled a higher cancer occurrence from the environment of mobile radio stations.

BIO: Has, in view of the strong spread of the mobile radio and the technical fields, not broadly much more medical cases to be occurred ?

Dr. von Klitzing: This actually is the case! We collected a fullness of material. The increase from "illnesses of unclear genesis", that very much probably have to do with field immissions, because they are related to the beginning of operation of GSM-Stations, is not to be overlooked anymore.

It more and more frequently is lamented over insomnia, over headaches, tinnitus, heart rhythm disturbances and concentration disturbances until to aggressions - above all by children.

Often, the blood picture changed. Not ripe erythrocytes cause a lacking oxygen supply of the tissues. That's of all, however, is first the top of the iceberg according to my opinion, because the biological system is unhinged in most cases only after a longer effect time. The outbreak of a defect can last years and additionally still depends on the individual constitution, the previous injuries and the sum of other environmental burdens.

Dangers, one doesn't want to see

BIO: How react the physicians on it ?

Dr. von Klitzing: Very different. More and more responsible physicians beats alarm. They contact us also increasingly and support our work with profound documentations.

In many cases, however, one ignores the supposition of patients, that their medical condition could have to do with a mobile radio station. The worries of the people are considered as crank. If no clinical results are available, the symptoms are regarded as conditionally psychosomatic and one orders sleep or sedative pills and other psychotropic drugs. A connection with mobile radio radiation can not at all exist, since the legal limits are everywhere and specifically kept at the relevant place according to official information.

BIO: This also is actually then the case ?

Dr. von Klitzing: Not any question! The limits even almost always becomes under-run. But the problems are, as I yet insinuated, completely elsewhere: Firstly this limits are even much too high. That it goes technically also differently, Switzerland and Italy prove, for example, where one has not only considerably lower limits, but also the safe distances must be essentially bigger between transmitters and residential areas.

Secondly the pulse pause relationship partially goes into the calculation at the pulsed fields of the GSM-Standards, D-Netz and E-Netz. Calculation size is consequently an averaged value. And thirdly responds the human being, as became known from the construction biology, already far below the limits. Often even already with less than a ten thousandth of the limit - and this usually after relatively short duration.

BIO: Can you prove this empirically? This "all-clearer" cast doubts very much on such statements.

Dr. von Klitzing: We tested electro-sensitive test persons here in Lübeck on it in our absorber hall here. Into the shielded cabin, in which they were, decided electromagnetic fields were controlled brought in. Then, the changes in the E.E.G. were read off, thus in the course of the modifications of the brain electricity, in the EKG, that is in the variability of the heart rate, as well as in the regulation of the peripheral circulation. Negative reactions almost always appeared.

BIO: Are there over these results conversations with your colleagues and the mobile radio operators ?

Dr. von Klitzing: Unfortunately as well as not at all. I invite again and again competent people: Come ago, look at our studies! But no one prefers to protect himself from unpleasant realization. From all German operators solely the Telekom made expertly with us. On the other hand, it is also difficult to get under from our side a corresponding publication in the technical press, that doesn't fit into the broadly radio-friendly scheme.

BIO: What could be done about quite practically in the vexatious question of evidence to move forward ?

Dr. von Klitzing: Surely the statistical proof of the damaging effects of mobile radio radiation is not to be produced easily. The people don't react all similar. This also, because they show an individual history and presence of the burdens of environmental poisons and other effects.

Nevertheless, I proposed for example the National Bureau for Radiation Protection, to put together the data existing in sufficient quantity about concerned, that lives near mobile radio transmitters, and which are because of trouble of unclear genesis in medical treatment. One should do corresponding field measurements on the spot and should check the entire material for significant correlations. One could pull conclusions out of it on causal relationships.

These connections so already clearly appear in view of the fullness of the material that one certainly would already be more intelligent very soon with more exact look. If, like recent from the Saxon city Döbeln is signalled, that around an emitting tower occurs an accumulation of malignant tumors, that should not remain unnoted.

Surely, this is not the single place. Here, many informations are not passed on under the pressure of the operators on the part of the politics. One puts the head into the sand. Apparently it needs first a

middle health catastrophe before the state perceives his precaution duty and minimizes the risks in legal way. Up to now, however, the profit interests of the industry have priority.

BIO: Mobile communication seems to have become a fundamental condition simply like mobility for economic competitiveness as well...

Dr. von Klitzing: I am no enemy of mobile communication, but its health risk must be down-driven decidedly. If one includes the cost explosion in the health care, a better precaution is very much well of big economic benefit.

BIO: The possibility, to reach others with information anytime and to be personally reachable, is also however a question of quality of life.

Dr. von Klitzing: Certain, above all under the aspect of the comfort. From most technical developments agreeable utilization possibilities can be derived. Fact also is that for example an unhesitating emergency call per cell phone can rescue lives at an accident on the highway. However the actually anticipated outdoor supply is sufficient and with it a much weaker transmitting power as we must let go out over us presently!

BIO: If the trend is not already to be detained, could the technology herself not contribute more strongly then to minimize the risks through corresponding developments ?

Dr. von Klitzing: Absolutely. An example for it are the possibilities of the modern DECT-Standards with cordless telephones. DECT has in difference to the older, analogous cordless phones CT1plus or CT2 beneath some advantages the crucial disadvantage, that the base station of the mainline is emitting day and night - independently from it, whether someone is calling or not. Therefore, in the ambit of the reception possibility, all creatures are continuously exposed to a high frequency field pulsed with 100 hertz, whether in the own apartment or next door with the neighbour.

Whoever is here has not even during the night sleep the possibility to recover from this stress. Unless, he pulls the power-supply plug of the station and shuts down with it his mainline for this time.

Towards construction biologist, it was willingly admitted by manufacturers, that modern DECT-Telephone offhand could be built so, that they only are transmitting - if this is really required - namely during the calls. The consumer meanwhile doesn't demand this.

BIO: Normally he knows nothing over it. But for the most part there is also too little interest simple to make itself expertly...

Dr. von Klitzing: Thereby over the pressure of consumers it could certainly sure something be reached. Even a so crucially necessary step like the general parting of the pulsating of electromagnetic signals could be advanced with corresponding clarification over the market and the public. Because already for a long time, modern mobile transmitting is regarded as realizable also without pulsating.

Why pulsed signals especially are problematic

BIO: Are pulsed signals biologically more critical than non-pulsed?

Dr. von Klitzing: Much more critical - and this with all frequencies. Therefore already with the 50 hertz of our usual energy supply, that correspond to 50 periodic field alterations of the second. The D and E-mobile networks now exposes us additionally to a periodicity of 217 hertz. And it is exactly the strict regularity, to that the biological systems responds. Because our organism is programmed on flexible reactions. The heart must beat irregularly, the blood pressure constantly fluctuates. Each stiff system could regulate nothing more.

If now, from outside rigidly periodic technical fields, presses on these flexible control circuits themselves, it is only a question of time and the individual condition, if and when we become sick through it.

BIO: Are the non-pulsed UMTS-Frequencies means in this sense an advance ?

Dr. von Klitzing: Only partially. Firstly, only one variation of UMTS gives up the pulsating. A second, that is introduced simultaneously, is still pulsed. Secondly, the previous GSM-System doesn't vanish with the entering of the new frequencies. It exists parallel for longer time to UMTS and will furthermore even be connected with this network.

It therefore would be demagogic, with the outlook to the non-pulsed variation to awaken one hopes and to let the total problem of the mobile radio effects appear in more favourable light.

Which precautions is there ?

BIO: Can we as users do something for themselves, to protect us from the effects of the electro smog?

Dr. von Klitzing: I recommend the principle: reduces, minimizes, where always this is possible. And: Utilization of this modern technology only then, if it is absolutely necessary. The alternative to use the good old solid network one should not forget so fast, even if the cell phones offers itself to us as a so comfortable solution.

Whoever from us then must or wants to be actually continually attainable, therefore has his cell phone incessantly switched on and moreover still carries it at the body ?

What prevents us from moving a few meters at a telephone call instead of having a cordless listener handy at the price of electro stress throughout the apartment ? And if it should be already a cordless, then however only one, that also allows us rest periods, as already said !

Not at least we should protect above all our children, because they are particularly endangered, since they stand in a biological maturity process and their immune system has not yet finished training.

BIO: Against the fields of transmitters and also this of the normal electro installation in the residential area, we can do however little with this behaviour. Are there effective methods of the shielding ?

Dr. von Klitzing: Under consideration of the domestic electro installation is this no more problem nowadays. Corresponding wires including sockets are standard offers in the meantime. The cables has twisted-pair, shielded in order to reduce the magnetic component and against the electric component.

Such an equipment also is payable. One must expect three percent of a cost increase of maximum for example at the new building of a home plus a five hundred (Euro) for measurement and advice. Whoever would like to do it for his own, can easily get himself problems - also at the installation of a network free switch.

Similarly, the things lies with attempts to shield the apartment against the fields of the mobile phone antennas. With aluminium wallpapers for example, you can get reflections easily, therefore a reinforcement. Absorbent plaster already is better there. If possibly, an expert always should be consulted.

BIO: You seem to be one of the lonesome "callers in the desert." Do you have enough allies for your position ?

Dr. von Klitzing: At university institutions hardly. The few, that cut into the same critical "notch", you can count easily at a hand. It also is heavy to get a foot on the earth in the established science with one as anti-progressive heretical opinion.

Yet however in the society we stand absolutely not alone what testifies also the multiplicity of the citizen initiatives against the construction of mobile radio antennas. That not always needs to be sensation exhilarating movements. If parents of a day-care centre for example join together, and does not want to tolerate an antenna construction not sufficiently far departed, then this is sufficiently

respectably and often not unsuccessful. This is no less applicable to concerned tenants, who move in front of court.

There are incidentally very sensible judgments there. Because it is simply fact that one must construct the emitting stations under the aspect of workingness not at all in the immediate proximity of residential areas. The technical problems brought up by operators are not comprehensible in the most cases. It is actually always only about an advantageous integration in the existing infrastructure. One must uncover this, then something can absolutely be reached. In this respect I am not at all pessimistic, if this may also look occasionally so.

BIO: Mr. Dr. von Klitzing, we thank you for the interesting conversation.

Book tip:

Silvio Hellemann: "Constantly under stream. Handbook for electronic sensible persons", Publishing House interna aktuell. EUR 20,90.

Lebrecht von Klitzing

Lebrecht von Klitzing was born 1939 in Neuweistriz/Schlesien. After the study of physics, chemistry and biology, he graduated 1966 to the Dr. rer. nat. As a scientific assistant, he worked at the TU Brunswick, at the Max-Planck-Institut Wilhelmshaven, at the University of Bonn, as well as at the Medical University of Lübeck.

Since 1977 Dr. von Klitzing directed the clinical-experimental research equipment for the Medical University Lübeck. Since 1983, he occupies himself with the effects of electro smog. Among other things, main focuses of his researches are the influence of static magnetic fields on the brain streams as well as the effect of pulsed electromagnetic fields on physiological parameters of the human being. Since March of this year Dr. von Klitzing works as a free scientist among other things at the International Institutes of Biophysics with seat in Neuss near Düsseldorf.

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Dr. Lebrecht von Klitzing. A caller in the desert. Wants not to create panic, however he thinks: One must uncover nuisances, then something can absolutely be reached

So, you reduce the Burdens of electro smog

- Switch on your cell phone only if you telephone or want to be attainable !
- Don't carry constantly your switched on cell phone at the body above all, if you are on the way and the unit therefore often must produce contact with the next emitting station.
- Speak on the cell phone possibly only where good reception is: Outside, at the window or close to the outside wall. At unfavourable places it powers up the own transmitting power.
- Always use a free intercom with external in the car, also on the parking place. The so-called headset, as antenna can work and with it the entry of the field emissions, to the brain still reinforces.
- BIO tip: According to a Swiss study can one on the Handy pasted, energetically loaded metal little metal die, intercept and increase simultaneously the damaging radiation of the body-own energy level.

- Interrogate the mailbox of your mobile connection, whenever this is possible, over the conventional telephone network. That is even cheaper!
- If you want to use a cordless telephone absolutely, but not let be "bombarded" your family, your neighbours and yourself electromagnetic around the clock, purchase yourself a analogous one of CT1plus standard, that sends only during the conversations !
- Keep an eye that the seal lamellae of your microwave are not soiled and no radiation is placed by it freely. Consider moreover that food changes through this type of the heating in its structure, that means especially denatured strongly.
- Set up your network-run radio alarm clock at least one meter off your body, not at all however at the head of your sleep place ! Battery-powered alarm clocks usually even incriminate only those people, that react in the vicinity of three meters to the second pulser. Also a quartz watch can cause such problems.
- Halogen lamps dispense not only light but have, since they are driven with low tension and therefore high amperage, an intensive magnetic field. Whoever reacts strongly to it neither should place them on the night table nor on the desk. For electro sensible persons, it seems advisably to avoid also the quite economic energy savings lamps since they possess a high frequency generator, that emits strong fields.
- The market is flooded with baby phones, with new technologies at present, that are biologically little amicable. Expect of your child, only such which are then activated, if it begin to scream as well as to call. Is your unit sending in short time distances pilot signals to the reach control, this can turn into a burden.
- Spend your spare time not only at the computer! Also with radiation-poor and LCD-Monitors you get a considerable energy entry about the keyboard, that is directly before your body. Computer games therefore endanger your children also because of the electromagnetic radiation.
- Banish metal beds and spring core mattresses from your bedroom, if possible. They work for your surrounding technical fields as powerful antennas.

Deformed creatures through mobile radio ?

Not only people, also animals are effected by the damaging effects of the up-to-date technology. In Bernried at the Starnberger lake for example a malformed calf came to the world at the yearly beginning. His heart was outside the body. A phenomenon, that could be led back, according to the treating veterinarian Dr. Werner Kahn, to the influence of six mobile radio antennas on the pasture. Meanwhile, two calves died further on the same yard... The veterinarian doctor generally has the impression that piled up illnesses appears in cow barns with corresponding antennas on the roof.

This observation goes hand in hand with one by the Bavarian department of the environment ordered beef study, with which deformities, lavatories and genotype changes in general had been asserted.

*From a SZ-Bericht from
Hanne Fassmann*

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