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## **Information concerning the need to limit exposure from electrosmog on the electromagnetic field of the Bemer Therapy System**

Prior to industrial use of electricity starting over 120 years ago, the only natural sources of the electromagnetism necessary for life and evolution were sunlight, the earth's own magnetic field, electrical phenomena in the atmosphere and minor cosmic rays.

Modern technological progress is based on multiple uses of electricity and electromagnetic fields. Our exposure today has increased a millionfold. It should also be noted that large differences exist as to how technical and natural fields are produced. A magnetic field is created wherever „charged particles“ move, ie where current flows; and it is always vertical to the direction of the current.

Only static magnetic fields exist in nature. An example of this is that the earth's magnetic field is almost constant at a flux density of 45 microteslas in our latitude. This means that ions are merely aligned. Movement during an impulse series can vary in strength, resulting in a pulsating static magnetic field depicted as always being null linear asymmetric.

Technologically produced current is, however, alternating (Wechselfeld). This allows greater quantities of electric voltage to be produced and delivered. In Europe the public grid operates at a frequency of 50 Hz. This means that the movement of the ions changes directions 100x per second. This is always depicted as null linear symmetric. Thus, direct current creates a static magnetic field that is expanding at the speed of light, and alternating current creates an alternating magnetic field. One has to differentiate between electric fields, which are independent of ionic movement, and magnetic fields. The electrical fields are caused by the voltage.

Various modern technologies use largely high energy or high frequency electromagnetic fields. In order to differentiate among their biological effects, they have been categorized as follows:

- . strong electrically static magnetic fields (eg tram/trolley, electric locomotive)
- . strong static magnetic fields (eg tram/trolley, electric locomotive)
- . lower frequency electrical „alternating fields“ (eg household appliances)
- . lower frequency magnetic „alternating fields“ (eg overland wires)
- . high frequency electromagnetic fields (eg telecommunications)

Civilian and military systems using longwaves, middlewaves, shortwaves, ultra shortwaves, as well as the ever expanding use of numerous mobile phone networks and microwaves, are responsible for the creation of the constantly growing group of high frequency electromagnetic fields.

It is difficult to make any general statements about the effects of electromagnetic fields on mankind due to the extreme variations. Science is agreed on the following points:

1. Basic functions associated with life are coupled to electromagnetic interaction (reciprocity), such as metabolism, muscle activity, sense perception and a highly developed neurological system .
2. Life systems require external magnetic and electromagnetic fields, such as the earth's magnetic field and sunlight, in order to maintain important life functions.
3. Electromagnetic fields can affect life functions.

Whether these effects are beneficial or detrimental to the organism and its functions depend largely on the method, the flux density and the length of exposure to the fields.

With the exception of special cases, the largest exposure to the ever present electrosmog is to be found in lower frequency alternating electrical fields (household appliances) and above all in high frequency electromagnetic fields (microwave ovens, mobile phones, radio, television).

If an individual is relatively sensitive to these rapidly changing fields, or exposed to them over a longer period of time, then this can create stress in the organism. This can be a symptom of „electrosmog“. The following uncharacteristic, neurovegetative symptoms have been associated with electrosmog: lack of energy, itchy or burning eyes, general nervousness and irritability, headaches, lack of concentration, heart-circulation complaints, undefinable muscle and joint pains, tiredness, sleeping disorder, dizziness, nighty sweating, etc.

To date, a large number of studies conducted in clinics and universities concerning the positive therapeutic effects of special electromagnetic fields have been conducted. The BEMER 3000 systems work with a low frequency (30Hz) pulsating electromagnetic field in the microtesla range (max 100  $\mu$ T, ie 1.000 to 10.000 times weaker than an average pinboard magnet). The following statements are valid about the BEMER-Impuls:

1. Increase of the reaction capability of the molecular and submolecular structures in the organism by means of an up till now unique broadband signal that generally makes it easier to initiate a wide spectrum of chemical reaction processes (Kafka, WA).
2. Electromagnetically induced activation of HSP 70, resulting in a synthesis of the special proteins necessary for repairs (Jelinek, R), improved and faster healing of wounds (Preissinger, M) and delay of muscle cramps after anaerobic stress (Spodaryk, K).
3. Increase of the circulation, down to the microcirculation (Michaelis, H), resulting in an increase of oxygen partial pressure and the unclotting of erythrocyte clusters into the blood (Malkomes, Ch). Improved metabolism of the red blood cells through the filling up of the ATP- and other energy rich phosphate storage depots (Spodaryk, K). Lowered blood pressure and a reduction in pulse frequency and vegetative relaxation (Michels-Weikili, S) are of basic importance for the overall improvement of the patient's condition, as well as for the regeneration and activation of the immune system.

The sum of all the reactions contribute to a restoration and stabilization of homeostasis in the organism. Homeostasis is the sum of all dynamic processes that enable an organism to maintain its balance despite constantly changing external influences. Since an electromagnetic field, as created by BEMER-Systems, significantly attacks the basic causes of the illnesses and physical complaints, it can be applied over a broad spectrum of indicators and achieve positive therapeutic results.