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### **Effect of Microwave Radiation on Humans**

In the last twenty years, we have adopted mobile phones as an integral part of everyday life and hundreds of millions of people have started using personal mobile devices which transmit and receive Radio Frequency (RF) signals to communicate. The RF signals from mobile phones fall within the microwave part of the electromagnetic spectrum. This radiation is also referred to as microwave radiation or electromagnetic radiation. In order to make this work, there are at least 126,000 cell phone towers that also emit microwave radiation. Could this microwave radiation have a negative impact on our health?

The biological effects observed on the cardiovascular, endocrine and immune systems and on the behavior of animals studied seem to be thermal effects of acute exposure to RF and microwave radiation, with increases of at least 1 °C or 2 °C in temperature needed to produce these effects. As to the increased risk of developing cancer after exposure to RF or microwave fields, the evidence for such an association is extremely weak.

Since the radiation from mobile phones and signal stations does not have enough energy to break chemical or molecular bonds directly, there is no basis in theory to suggest that they can damage DNA. Moreover, a biological mechanism that explains any possible carcinogenic effect from RF or microwave fields has yet to be identified. In vitro experiments that show abnormal cell proliferation, changes in cell membranes, and movement of ions and substances across membranes are difficult to extrapolate to people.

The evidence available does not provide a clear pattern to support an association between exposure to RF and microwave radiation from mobile phones and direct effects on health (such as increasing the risk of cancer). However, the quality of this research and the relatively short-term data do not allow ruling out adverse effects on health completely.

In other words, the absence of evidence of detrimental effects on health associated with mobile phone use is not evidence of absence of such effects. At the moment, it is impossible to state that exposure to RF or microwave radiation (even below the permitted levels) does not have adverse effects on the health of the general population. The current evidence, however, does suggest that if there is a risk, it is small. Therefore, a precautionary approach (as recommended by the EU) to the use of this communication technology should be adopted until more scientific evidence on effects on health becomes available.

Finally, evidence shows that the use of a mobile phone while driving results in increasing a significant risk of a traffic accident.