

Development of a near field measurement approach and randomized intervention study on concern and well-being

(DISCO)

Abstract

Concerns about potential health effects from mobile phone radiation are still common in the Swiss population and worldwide. Yet, little is known about how awareness of the personal exposure situation, including both environmental exposure and local exposure due to the own mobile phone use, has an impact on risk perception. This study addresses this issue in a combined approach including an interventional study with a sample of people who are concerned about potential health effects of electromagnetic fields generated by mobile telecommunication devices and infrastructure. A newly developed measurement device that can be attached to the head will record the so far missing data about the mobile phone radiation from the own mobile phone use. A personal exposure meter will simultaneously record the environmental exposure. This will allow us to transparently inform people about their full personal exposure situation, including the proportional importance of different sources. A novel questionnaire addressing the level of concern together with questions addressing the personal well-being will be developed and applied in a randomized intervention study to evaluate changes in risk perception after receiving personal exposure information. Behavioral changes due to the intervention will be recorded in terms of an activity monitor worn on the wrist of the person and by a Smartphone app recording all relevant information about operational data of the own mobile phone usage.

This study will give important insights into potential changes on the short and medium-long term in the level of concern, mobile phone usage (e.g. increase of hands-free calls) and personal well-being of people concerned about potential health effects of EMFs. Data collected in this study will also enable a better understanding of the relative importance of the contributions from different sources to the total personal RF-EMF exposure in daily life, which is important knowledge for public risk communication. Little data is available about output power of mobile phones in the 4G (LTE) and future 5G networks in real life situations. This project is timely to fill this gap of knowledge and may also be used in a future RF-EMF monitoring as requested by the Swiss parliament.