



Non-Ionizing Radiation & Children's Health

International Joint Workshop
18 - 20 May 2011, Ljubljana, Slovenia

POSTER

PLATFORM PRESENTATION

Personal EMF Exposure Of Children

Blaž VALIČ (1,2), Peter GAJŠEK (1)

(1) Institute Of Non-Ionizing Radiation, Ljubljana, Slovenia

(2) Genera, Trzin, Slovenia

Introduction

Due to different lifestyles the typical EMF exposure of children is not necessarily similar to the exposure of adults. Since the number of survey studies about the exposure of the children is limited, we started one in which the exposure of 20 to 30 persons below 18 years will be analyzed.

Materials and methods

Young participants and their parents were invited to take part in a survey study where they carried low and frequency personal exposimeter. A special questionnaire was prepared where children (and their parents) marked their activities during the experiment.

Results

Till now 17 children participated in the research, carrying low frequency (3 participants), high frequency (4 participants) or both (10 participants) exposimeters. All the participants were younger than 16 years at the time of the participation, with the average age of 12. The low frequency exposimeter was worn for 955 hours and the high frequency for 1018 hours with the average carrying time of 73 hours.

The results for low frequency exposure show great variability of the exposure between the participants. The maximum value of the magnetic flux density varied from 1.25 to 139 μT . Moreover also the average value varied considerably: from 0.04 to 1.07 μT . In total, 5 out of 13 participants had an average exposure over 0.3 μT . The same 5 participants had also values of magnetic flux density greater than 0.3 μT for more than 10 % of the time.

The average high frequency exposure is very low and in general below the measurement range of the exposimeter (0.05 V/m). Slightly higher average values were measured only for GSM and DECT phones, base stations and WiFi. Maximum values are above the measurement range of the exposimeter (5 V/m) for equipment worn close to the body (mobile and DECT phones), evidently higher for equipment located in the living environment (WiFi, 2.47 V/m) but low for radio and TV broadcasting (below 0.3 V/m).

Conclusion

Although the results of the study are based on a small sample (currently 17 participants), they clearly show that there is a great variability of the exposure of the young people to the EMF. The differences in the average whole day exposure could be in the range of a few orders of magnitude. It is therefore important to conduct wider survey studies of children to further evaluate their exposure to EMF.