



EEG BIO-EFFECTS ON COCHLEAR DEAF FROM CELLULAR PHONES, (FIRST TESTS).

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OBJETIVES

This work aims to provide evidence of an inductive electromagnetic bio-effect on the human brain, which is independent from sound waves and produced by mobile phones, in proximal field, through correlating the EEG data obtained from electrodes placed on both normal and cochlear deaf individuals.

METHODS

Two groups of four subjects are placed under controlled electromagnetic conditions inside a Faraday chamber, (two healthy and another two suffering from cochlear deafness). Each is sitting on a chair, fitted with additional support, and holding a cellular phone 2 cm away from the right auricular, in order to avoid a thermal effect as much as possible. All of them, relaxed and with their eyes closed, are EEG recorded in a basal state with their mobile phones off.

Then, each of them is again recorded under the same conditions but with the mobile on and listening to the same conversation. In order to assess the EEG changes so observed, a statistical analysis by means of the FFT (Fast Fourier Transform) was carried out.

RESULTS

For both, healthy and cochlear deaf, assimilation or integration of the mobile phone signal by some electrodes is to be found. This is due to the increase of amplitudes for alpha and theta waves, whereas the signal is not integrated in other electrodes. By correlating the spectra of frequencies of corresponding EEG records for the same brain areas, we have not observed significant differences for both groups (Fig. 1 and Fig. 2).

CONCLUSIONS

A possible electromagnetic direct inductive, non-thermal, bio-effect on the human brain is observed. This effect is produced by the use of mobile phones and it bears no relation to the sound waves

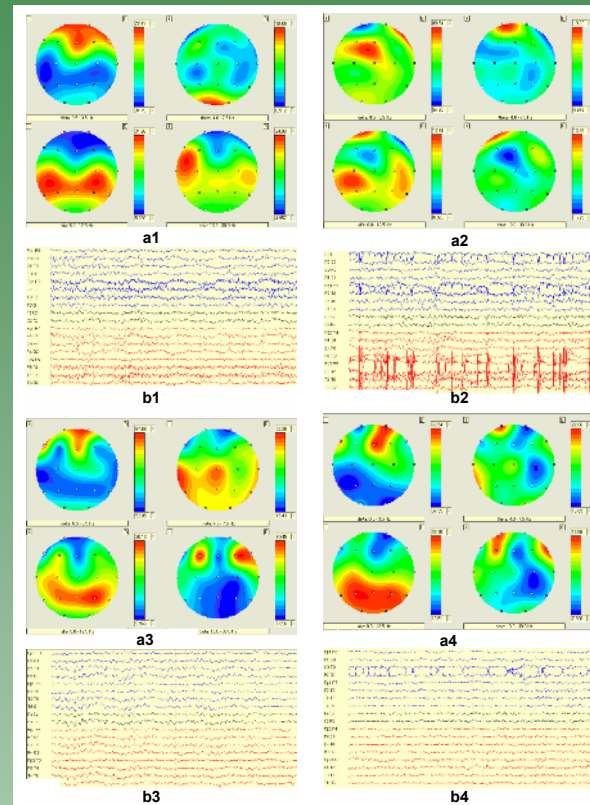


Fig. 1: — Mapping of: a1– basal non-deaf, a2– non deaf with mobile on and listening, a3– basal deaf and a4– deaf with mobile on and listening.
 — EEG of: b1– basal non-deaf, b2– non deaf with mobile on and listening; b3– basal deaf and b4– deaf with mobile on and listening.

REFERENCES

— Bardasano, J.L., Álvarez-Ude, J., Gutiérrez, I., Goya, R.: 2005, New device against non-thermal effects from mobile telephones. *The Environmentalist*, 25, 257-263.

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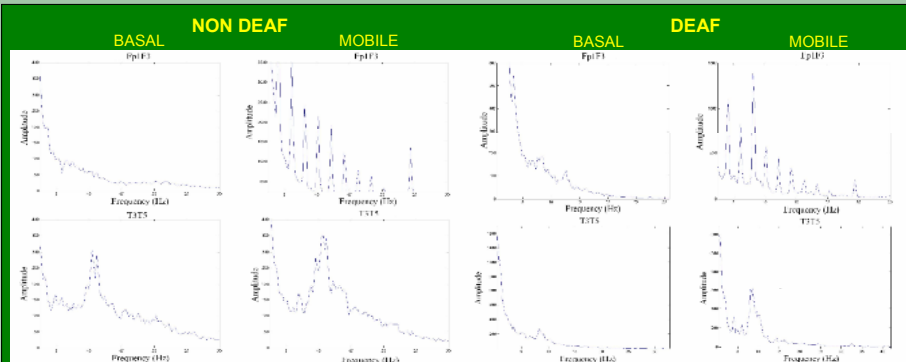


Fig 2: Spectrum of EEG frequencies obtained:
 BASAL– in basal position (electrodes Fp1F3 and T3T5)
 MOBILE–with the mobile on and listening (electrodes Fp1F3 and T3T5), for both, deaf and non-deaf.