

## P02-02

### POSSIBILITIES OF USING ELECTROENCEPHALOGRAPHY IN CEREBRAL DOMINANCE STUDY

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**Aims:** The purpose of this study was to distinguish electroencephalographic possible typical features at left handed children as against to right children, and also to find out possible range aspects which can suggests the central dominance for language.

**Method:** Electroencephalographic (EEG) band was recorded on an EEG device (Pegasus Digital EEG-EMS GmbH - Austria) according to the international standards.

**Subjects:** Sample I: 8 left handed children (av. 9.38 SD 3.53 yrs); Sample II: 18 right handed children (av. 11.06 SD 2.48 yrs).

Using the data obtained by Fast Fourier Transform (FFT), we performed comparisons regarding the index, and the average frequency for delta, theta, alpha, and beta bands. The comparisons was performed for each subject, for each band, and pair of electrode between left and right hemisphere, between left and right children for every electrode, and for the two hemispheres.

**Results:** We have found significant differences on EEG features between left and right children regarding both index, and frequency of the main cerebral rhythm, the most meaningful been at alpha, and beta rhythms. For instance the beta frequency was higher on the left recordings, mostly at right children, where seven of the electrode pairs presents significant differences.

**Conclusions:** In contrast with classical, and virtual analysis the Digital EEG, and FFT test is a method that can be useful to study the cerebral dominance. The advantage of this method pleads the fact that firstly it is a noninvasive method, and despite other sophisticated functional techniques remains the most inexpensive.