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### Original Article

#### Evaluation of Quantitative Electroencephalography in Children with Autistic Disorders in Various Conditions Based on Spectrogram

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## Abstract:

### Objective:

to evaluate the brain signals in children with autism disorder in many different conditions of quantitative Electroencephalography (qEEG) recordings in order to highlight abnormalities and to characterize this group.

### Method:

In this study, spectrogram was used as a tool for evaluating qEEG in 15 children with autism disorders (13 boys and 2 girls aged between 6 to 11 years old) and in 11 normal children (7 boys and 4 girls with the same age range). Signals of the two groups were recorded in nine conditions.

### Results:

The recorded signals with the relaxed eye-opened condition in alpha band, those recorded with looking at a stranger's picture condition in beta band, and the ones obtained with children looking at inverted stranger's picture in the same beta band show the best discrimination of 92.3%, 88.9% and 88.9% respectively using spectrogram .

### Conclusion:

Among the several different EEG recordings, the relaxed eyeopened condition in alpha band had been the best condition for discriminating the two groups using spectrogram. More abnormalities were observed in the prefrontal lobe and the left brain hemisphere in children with autism disorders.

## Keywords:

[Autistic disorders](#) , [quantitative Electroencephalography \(qEEG\)](#) , [Investigative techniques](#)

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