

# Rate of Persistent EEG Abnormality in Non-Epileptic ADD/Learning Disabilities Students

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**Background:** Previous studies show an unexpectedly high rate of occurrence of significant EEG abnormalities in prepubescent children with non-epileptic developmental disorders of academic achievement and attention (LD/ADD).<sup>1,2,3,4</sup> The fate of these changes, with or without antiepileptic drug (AED) therapy is unknown. To clarify this question, we analyzed all EEG studies done in developmentally disordered students between 1995 and 2009 excluding epilepsy and pervasive developmental disorder.

**Methods:** Retrospective analysis of 1,198 EEG recordings/charts in referred ADD/LD students, those with a dysrhythmia grade II or III (Mayo Clinic classification<sup>5</sup>), and those in whom a subsequent EEG was performed.

**Results:** 218 (18%) had grade II or III EEG abnormalities with a mean age of 10.6 years +/- 4 years, 146 were male (57%). Follow-up EEGs were performed in 59 (27%), mean interval between the recordings 3.6 years. 34 remained grade II or III (62%, 21 male, 12 on AED Rx). Of the 25 with normalized EEG, 19 were on AED Rx.

**Conclusion:** EEG abnormalities are not rare in non-epileptic LD/ADD students, and over half with or without AED Rx remained abnormal. The effect of AED Rx on the underlying academic and cognitive disorder is under investigation. These observations warrant longitudinal repeat EEGs in this population.

## References:

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