

The brain changes: Can this help Autistic Kids?

The brain is no longer considered to be hard wired. In fact it is now known that the brain is plastic (malleable). It can change depending on the fuel and activation of its neurons. Fuel is glucose and oxygen but here we are addressing the activation part. Dr. Randy Beck stated, “Neural plasticity refers to the way in which the nervous system can respond to external stimuli and adjust future responses based on the outcome of previously initiated responses. In essence, the ability of the nervous system to learn is dependent on plasticity.”

If we localized the area of the functional lesion “under connectivity” we can devise a treatment program to strengthen the weakened pathways. Under connectivity and desynchronization are features of autism. Here is an article supporting the concept of under connectivity.

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OBJECTIVES: Autism is a severe neurodevelopmental disorder with a high rate of epilepsy and subclinical epileptiform activity. High physical connectivity on a microcolumnar level leading to epileptiform activity and low functional informational connectivity are assumed in autism. The aim of this study was to investigate nonlinear EEG brain dynamics in terms of synchronization in a group of children with autism spectrum disorders compared to a control group. We expected a lower degree of synchronization in autistic subjects. **METHODS:** The autistic group consisted of 27 patients with autism spectrum disorders diagnosed according to ICD-10. The mean age of the sample was 7.1 (SD 3.6) years, 14 of them were mentally retarded. Normal EEG was found in 9 patients, epileptiform EEG in 18 autistic patients. Four patients had a history of epileptic seizures, fully compensated in long term. The control group consisted of 20 children (mean age of 8.4, SD 2.3 years) with normal intelligence, without an epileptic history, investigated within the frame of the research program for cochlear implantation. They had normal neurological examination and suffered from perceptive deafness. Normal EEG was found in 17 of the control subjects, epileptiform EEG was in 3 control subjects. We analyzed night sleep EEG recordings from 10 channels (F3, F4, F7, F8, C3, C4, T3, T4, P3 and P4) with the inclusion of sleep stages NREM 2, 3 and 4 in the subsequent analyses. Coarse-grained entropy information rates between neighbouring electrodes were computed, expressing the synchronization between 11 selected electrode couples. **RESULTS:** Synchronization was significantly lower in the autistic group in all three examined NREM stages even when age and intelligence were taken into account as covariates. **CONCLUSIONS:** The results of the study confirmed the validity of the under connectivity model in autism.

The doctor must localize the level of the functional lesion (brainstem, pons, midbrain, cerebellum, cortex) and design a program specific to the child to create neuroplastic changes that correct the under connectivity.

Dr. Mane offers one on one consultation as well as Group Seminars for parents and children who suffer from Autism Spectrum Disorders. If you are interested in scheduling a consultation or to attend a seminar please call 813-935-4744.

For more information about Dr. Nelson Mane, D.C. and his treatment approach for ASD go to <http://www.manecenter.com/ADHD.htm>.