

Innovation Treatment of Autistic Spectrum Disorders using QEEG

The worldwide incidence of Autism and Spectrum Disorders (ASD) is increasing exponentially with one child out of 166 currently estimated to be affected by this devastating illness. Current approaches to the treatment and management of these children are symptomatically based, not proactive and ineffectual. The need for better understanding of the pathophysiology of ASD and aggressive interventions require a paradigm shift, whereby current and future research findings are rapidly translated into effective interventions. Using a multidisciplinary approach similar to that we have recently introduced in the minimally conscious population, we have used QEEG as a guide to help re-establish normal brain homeostasis in autistic children.

Recent scientific literature shows that functional real-time neuroimaging gives critical information on the pathophysiological basis of neuropsychiatric disorders. At BRL, the methods of QEEG source localization described above have been used to obtain functional brain images. Such QEEG brain images have revealed that clinically homogeneous populations contain heterogeneous subtypes of underlying brain dysfunction, with differential responsiveness to medications. Applying these techniques to children and adults with ASD, several subtypes have emerged.

The effects of various agonists and antagonists of neurotransmitters upon the QEEG profiles seen in this population have been investigated. In order to develop an individualized treatment plan for patients with ASD, QEEG effects are used to construct differential dose response curves (the effect of different specific doses of various drugs on the brain). These curves quantify the extent to which each drug alters the QEEG profile of the patient toward the age appropriate normal values. Patients are then placed on an individually optimized combination of drugs and the behavioral and QEEG effects evaluated in an iterative manner. This method has greatly improved communication, interactive and play behaviors in the several children treated thus far.

Source: NYU Medical Center/School of Medicine Brain Research Laboratories
http://www.med.nyu.edu/brl/research/current/qeeg_innovation.html