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FDA clears brain scan to diagnose ADHD

The Seattle Times posted an article stating the FDA cleared brain scanning to help in the diagnosis of ADHD in children aged 6 to 17. The system called NEBA measures the frequency of brain waves theta and beta. Now the average person doesn’t understand theta and beta waves but it is two squiggly lines moving across a thin piece of paper that tell the activity going on in the brain. Apparently, children with ADHD have more of these squiggly lines then children who do not. This test based on a study of 275 patients, 275, which showed that implementing this NEBA test helped doctors make a more accurate diagnosis of ADHD.

Medical New Today published a similar story stating, “the FDA gave the green light to the NEBA system.” Stating once again, the test conducted with 275 patients indicated that the test along with other clinical information might help in a more accurate diagnosis of ADHD.

In the FDA news release, they stated the marketing of the NEBA system was allowed as “the first medical device based on brain function to help assess ADHD disorder in children and adolescents 6 to 17 (FDA 2013).” Again, claiming the study conducted on 275 patients aided clinicians in making a more accurate diagnosis of ADHD. The FDA also states this test when used in conjunction with other standards of testing aided in diagnosis.

Multiple organizations and institutions state that ADHD is the most common mental disorder-affecting children today. Parents and caregivers urged by all professional organizations to get second opinions from professionals in ADHD and not take the word of the local physician. With this in mind why would we want to subject our children to brain imaging at an age as early as seven or eight. Putting probes on their heads, connecting them to wires that lead to a large machine can be terrifying, even for an adult. The current standard of testing according to the FDA involves, “meeting the criteria in DSM-IV-TR, behavioral questionnaires, behavioral and IQ testing, and a physical examination.” This is already a lot to put a child. Adding a test to confirm an ADHD based on a study of 275 patients out of millions of children seems to be a bit premature.

Alan Gevins, director of the San Francisco Brain Research Institute and a cognitive neuroscientist, has published 150 peer-reviewed scientific and medical journals. He wrote in a blog stating that theta/beta waves can be manipulated and produced by many factors. Drowsiness, scalp muscle contractions, and eye movement are but a few of these factors.

Mark Cohen, PhD at UCLA Department of Psychiatry wrote in his blog “most of the relevant experiments that associate alpha, beta, and theta powers to ADHD have been to poorly conceived to appear in major journals (2013).” He concluded with “by legitimizing a device and method that will fail, thereby delegitimizing more sophisticated EEG-based tools in the future (2013).” He based this statement on the data to support this approach is exceedingly poor.

Parents and loved ones of those who suffer from ADHD want answers. They are fearful and at a lost as to what to do to help or get help. With the controversy over medications, it is hard to decide if you should medicate your child or not. The next question is behavioral therapy or cognitive-behavioral therapy. Will I be able to afford therapy and how long will my child have to go. What about diet? Should we change our diet for our child? There are many, many more questions that arise when trying to get a definitive answer to does my child have ADHD. The NEBA system seems to answer the question does my child really have ADHD. This system has been approved by the FDA and the controversy comes to as why did the FDA approve a system with evidence of only 275 patients and has not been peer reviews. This evidence, done by the company who hopes to sell their machine to healthcare, has made some remarkable claims. There are other studies on electro-imaging conducted every day on ADHD and none has published results in journals. Most companies doing studies on electro-imaging state the studies are promising but they have not drawn any definite conclusions yet.

For a parent looking for answers about ADHD, and on how to get a definite answer, this may be an option for them. The FDA has approved the marketing of this system and as a credible authority; a parent may find this enough to have a scan done on their child. I hope that this device will not taint credible, peer-reviewed research coming down the pike.

Food and Drug Administration. 2013, July 15. FDA permits marketing of first brain wave test to help assess children and teens for ADHD. Retrieved from: http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm360811.htm

Moisse, Kate 2013, July 17. Brainwave Test for ADHD: For Patients or Profit? ABC News from: <http://abcnews.go.com/Health/brainwave-test-adhd-patients-> profit/story?id=19686712

Rabiner, David Dr. 2008, November 23. Neurofeedback/Quantitative EEG for ADHD diagnosis. *Sharpbrains.* Retrieved from: <http://sharpbrains.com/blog/2008/11/23/neurofeedback-> quantitative-eeg-for-adhd-diagnosis/

The Seattle Times. 2013, August 4. FDA clears brain scan to diagnose ADHD in children [https://accounts.google.com/ServiceLogin?passive=1209600&continue=https://www.goo gle.co](https://accounts.google.com/ServiceLogin?passive=1209600&continue=https://www.goo%09gle.co) m/settings/&followup=https://www.google.com/settings/