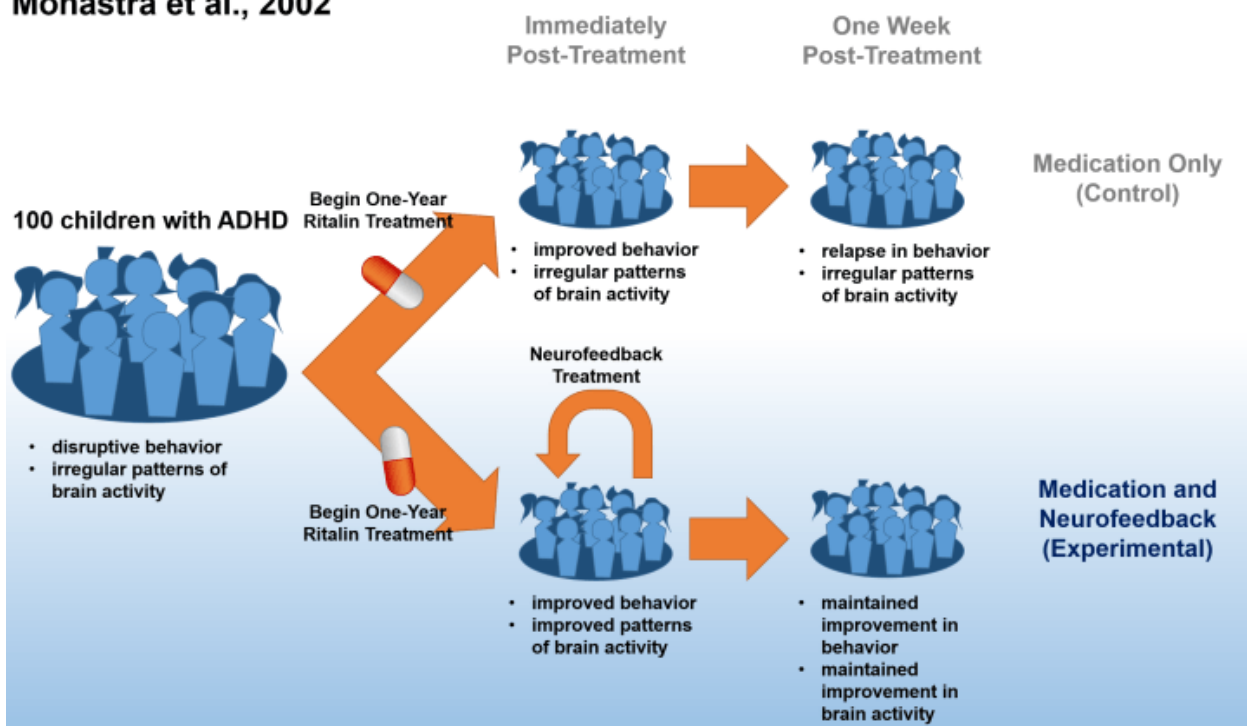


Studies have shown that neurofeedback training as a therapy for ADHD may be even more effective than the standard medication (Methylphenidate/Ritalin) used to treat this disorder. This was shown in 2002 by Vincent Monastra and colleagues at the FPI Attention Disorders Clinic in New York, who studied 100 children diagnosed with ADHD (Figure 3). <https://www.ncbi.nlm.nih.gov/pubmed/12557451> All of the kids were prescribed Ritalin, while approximately half of them also participated in neurofeedback training. The children who participated in neurofeedback training in addition to taking Ritalin showed greater improvements in focus and a significant decrease in hyperactive/impulsive behavior. Furthermore, only those children who underwent neurofeedback training showed promising changes in patterns of brain activity associated with increased focus. Even more striking was that these behavioral and neurological improvements persisted even after medication was stopped. This was not true of those children who took Ritalin but did not participate in the neurofeedback treatment, suggesting that brain training has the potential to induce long-term changes in how one's brain works.

### Monastra et al., 2002



**Figure 3.** Clinical trial reveals that neurofeedback training outperforms medication in treatment of ADHD. This figure schematizes the experimental setup and outcome of the study conducted by Monastra and colleagues in 2002. One hundred children diagnosed with ADHD were enrolled in the study. For one year, all of them were treated with medication (Ritalin), while half had their treatments supplemented by neurofeedback training. Immediately after the 1-year treatment period, the Ritalin-only group showed moderate improvement in the behavioral symptoms of ADHD while showing no improvement in patterns of brain activity associated with the ability to focus attention. By contrast, children treated with medication and neurofeedback training showed significant improvements in both behavior and brain activity patterns. Interestingly, one-week post-treatment, the beneficial effects of the neurofeedback-supplemented regimen persisted, while that of medication alone did not.

Source: [sitn.hms.harvard.edu/flash/2017/brain-training-future-psychiatric-treatment/](http://sitn.hms.harvard.edu/flash/2017/brain-training-future-psychiatric-treatment/)