

NEUROFEEDBACK CASE STUDIES

Each person we see has a unique story. Here are six illustrations of what is possible with neurofeedback. Each story is anchored by hard evidence of improvement using well established psychological measures.

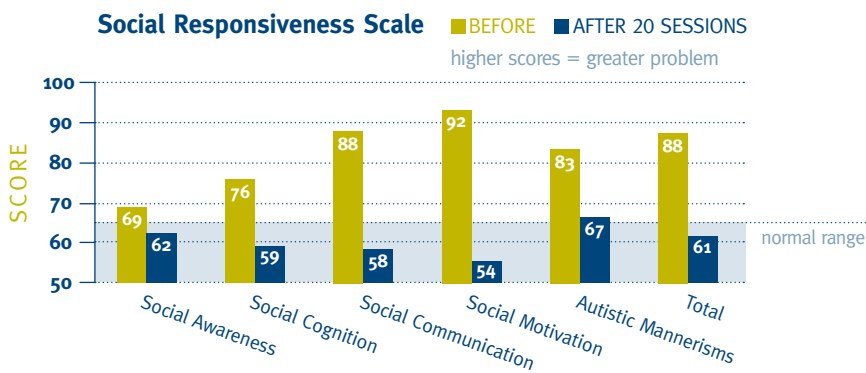
Sam: College student with Asperger's Disorder



Sam was a junior at URI. **Diagnosed with Asperger's Disorder, he struggled socially in college and grew isolated and quite depressed.** Sam had never been able to learn to drive: his ability to rapidly process and integrate the continuous stream of information required for driving was too impaired.

Sam responded well to neurofeedback. His scores on the Social Responsiveness Scale (SRS) illustrate his progress. **After 20 sessions, all but one of his scores fell in the normal range.** He no longer scored in the Asperger range on the Gilliam Asperger Disorder Scale, a well accepted diagnostic instrument.

After 20 sessions, we met to review his progress. Sam and his parents wanted to know if neurofeedback might improve his ability to drive so that he could do so safely. We conducted another 20 sessions. **Sam now has his driver's license, and his Dad says he's quite a good driver.**



Martha:

42-year-old woman with ADHD

Martha came to our center for neurofeedback due to severe ADHD. She was taking stimulant medication, which helped some. **But she still had serious symptoms which interfered with her work and family life.**

We completed testing prior to beginning neurofeedback using the Conners Adult ADHD Rating Scales and the Integrated Variables of Attention or IVA, an objective computerized test. On the Conners, even while taking medication, Martha showed significant difficulty with attention, hyper-restless behavior, and total ADHD symptoms. On the IVA impulsivity test, taken without medication, 999 people out of 1000 would have scored better.

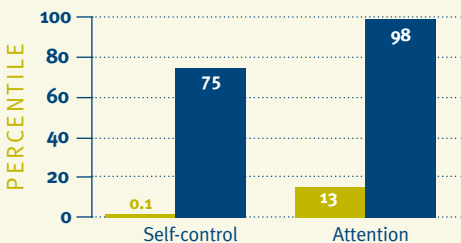
After 20 sessions of neurofeedback, these two measures were repeated. The repeat IVA was also done without medication.

The graphs present the results of this testing, with **very significant gains in attention and impulsivity** evident on both measures. **Martha reported similar improvements in her everyday functioning.**



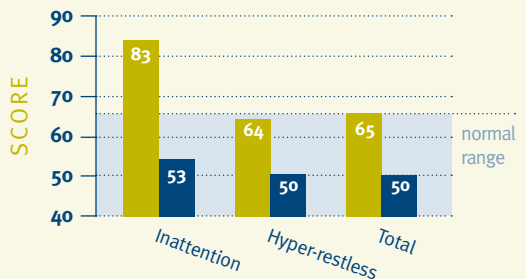
Integrated Variables of Attention

■ BEFORE ■ AFTER 25 SESSIONS
lower scores = greater problem



Conners Adult ADHD Rating Scale

■ BEFORE ■ AFTER 20 SESSIONS
higher scores = greater problem



Janet: 53-year-old woman with Post Traumatic Stress Disorder



As a little girl, Janet had been severely bitten in the face by a dog. **She had PTSD symptoms her whole life.** She had tried psychotherapy numerous times, but found little relief. She had also tried virtually every medication, also with little relief.

Janet had an important job with many responsibilities, but her near-constant anxiety took an extreme toll. **She was depressed. She could not focus.** Her attention was so poor that she simply could not sit down and read a book!

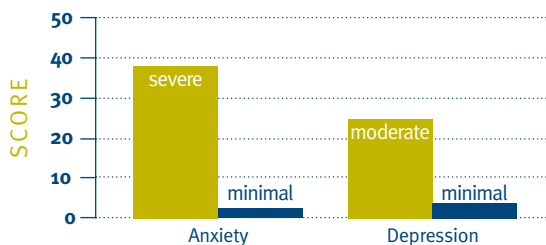
The Beck Anxiety and Depression Scales administered before starting treatment showed severe anxiety and moderate depression. Her Conners Rating Scales also showed severe difficulties with attention.

Twenty sessions of neurofeedback resulted in huge improvements for Janet. She reported only minimal depression and anxiety. Her attention was normal.

Janet is doing well now.
She loves reading.
She enjoys her job. She enjoys her life.

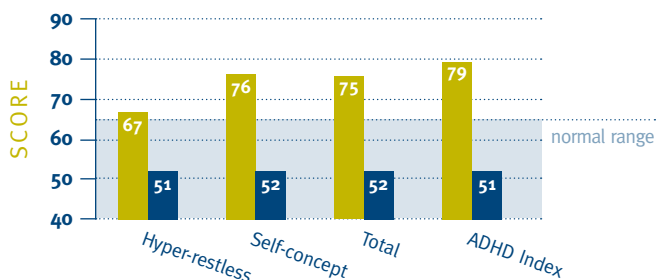
Beck Inventories

■ BEFORE ■ AFTER 20 SESSIONS
higher scores = greater problem



Conners Adult ADHD Rating Scale

■ BEFORE ■ AFTER 20 SESSIONS
higher scores = greater problem



Brad:

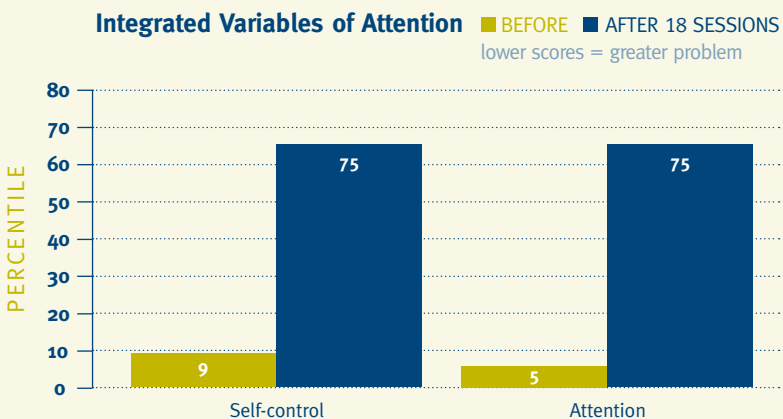
High school junior with ADHD

Brad was in his junior year when he came to us. Although he had been taking stimulant medication for several years, he continued to show inattention and impulsivity, as well as organizational problems and weaknesses in executive function. **The stimulant medication made his anxiety and oppositional behavior worse.**

Before starting neurofeedback, we conducted a computerized test of impulsivity and attention - the Integrated Variables of Attention (IVA).

This showed significant problems, with his scores falling at the 9th percentile for impulsivity (self-control) and the 5th percentile for attention. After 18 neurofeedback sessions, we repeated this computerized test to assess his progress.

His scores showed dramatic improvement. After 18 sessions of neurofeedback, he scored well above average for both attention and self-control (impulsivity). Both Brad and his parents reported similar improvements in attention and self-control at home and at school. **He was calmer, more focused, more flexible, and in a better mood. Brad went back to high school for his senior year without medication.**



Stacy:

High school sophomore with anxiety and depression

Stacy was a terrific student and athlete. Straight A's. Star on the track team. A very hard worker, she drove herself. Too hard. **She could not stop worrying about her tests and grades.** She studied obsessively. Her anxiety became so severe that she was placed on anti-depressant and anti-anxiety medication. These helped somewhat, but she continued to struggle with near-crippling irrational worry about her performance in school. Even with both medications, she experienced a moderate level of depression and anxiety. She also had quite significant difficulties with hyperactivity and restless behavior.

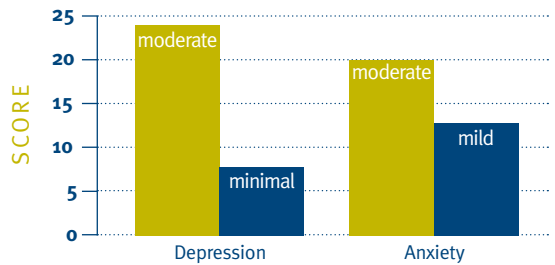


Stacy did well with neurofeedback training. **By 20 sessions, she was no longer taking the anti-anxiety medication and had reduced her anti-depressant dose by half.** Her mood was good and her anxiety minimal. Hyperactive restless symptoms were gone.

Stacy continued with neurofeedback for several additional months and was able to stop taking the anti-depressant as well. She continued to perform well at school, but without the intense pressure and distress. **After graduation, she headed to Tufts University.**

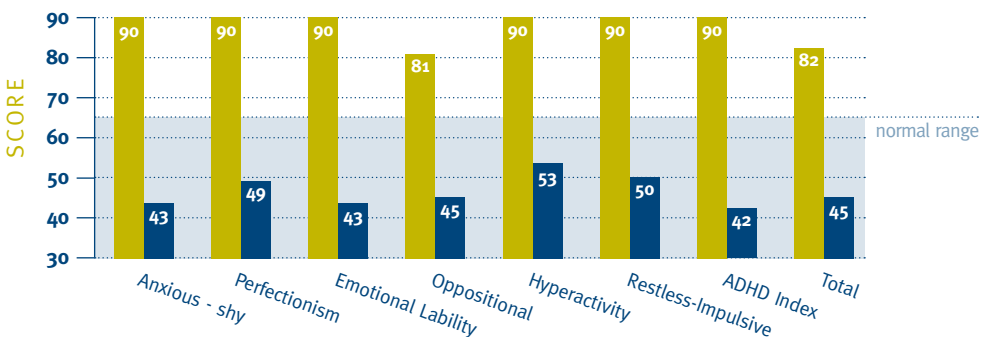
Beck Inventories

■ BEFORE ■ AFTER 20 SESSIONS
higher scores = greater problem



Conners Teacher Rating Scale

■ BEFORE ■ AFTER 20 SESSIONS
higher scores = greater problem





Sally: Six-year-old girl with Asperger's Disorder

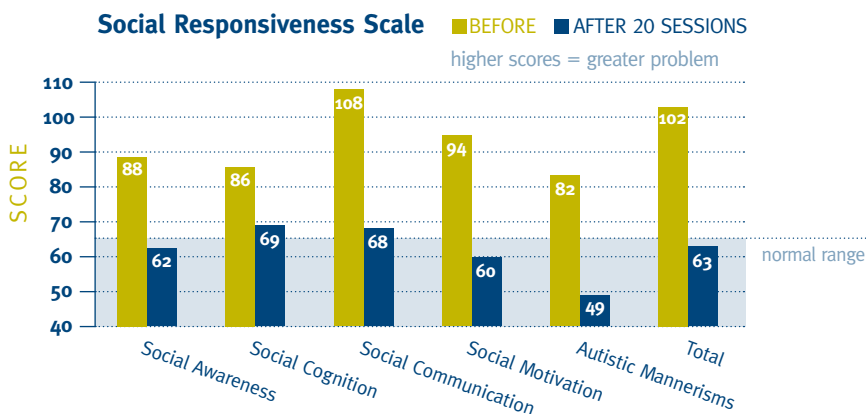
Sally was cute as a button. But she struggled to understand the social world and to remain calm and in

control of herself. **She completely avoided playing with other children her age.** She was rigid and bossy.

Like most kids with Asperger's Disorder, Sally also had significant difficulties with executive function—the ability to do what you need to do to get a job done effectively.

After 20 sessions of neurofeedback training, Sally showed very significant improvements in her social functioning, self-control, and executive function. On the measure of executive function, seven of the eight scales that were abnormal at baseline fell in the normal range after only ten weeks of treatment.

Sally was able to enjoy herself in **play with peers for the first time in her life and was much calmer, more flexible, and happier** - in school and at home.



To learn more, call **401.351.7779**
or visit www.neurodevelopmentcenter.com