

Follow up of 14 ADD/ADHD children ages 6 to 17 using the SB program

Background

The purpose of this follow up study, done at the Advanced Cognitive Enhancement (ACE) clinics in Toronto, Canada, was to examine the efficacy of the SB program with children suffering from AD/HD. SB is a computer-based software program designed to improve focus, attention and concentration, in general. Through different cognitive tasks, the program trains users in developing different cognitive skills, which include:

Concept comprehension –	understanding tasks and concepts
Working memory –	retaining necessary information for short periods of time, yet long enough to complete specific tasks
Sequential processing –	working with pieces of information, one after another
Simultaneous processing or multitasking –	processing a few pieces of information at same time
Attention duration –	Sustaining attention for longer periods
Processing speed –	the speed with which information is processed
Selective attention –	focusing on one task at a time
Divided attention –	focusing on more than one task at a time
Sensory motor coordination –	coordinating sensory and motor skills
Visual processing –	working with visual images
Auditory processing –	working with sounds
Audio-visual coordination –	working with both sound and visuals, simultaneously
Peripheral vision -	noticing background details while focusing on a task.
Visual tracking -	the ability to focus on a moving object

Earlier testing using the program, provided evidence those skills can be improved. SB was also designed to improve brain wave ratios especially reducing slow brain waves (theta, alpha) and enhancing betas especially beta1 and beta2). Previous research (Lubar, Monastra and others) has shown improvement in cognitive performance after using Neurofeedback protocols designed to improve brain wave ratios.

The purpose of the study was to find out if improvement in cognitive performance using the SB program would also result in improvement in behavior, hyperactivity and academics.

Method

The study followed a group of children, suffering from some form of attention deficit (at times combined with learning disability or central auditory processing disorder) ages 6 to 17 who purchased the program in the past 6 months. In the beginning of the program a self report scale that included 15 items divided into four groups: attention, hyperactivity, behavior and academics, was filled out by the parents.

The percentage average of one full round, which consists of 36 levels contained in the program, was recorded.

The same self report scale was filled out the second time during a follow up visit anywhere between 12 and 22 weeks after commencing the program. The percentage average of the last round of practice was also recorded.

1. The study only monitored children who trained at least 20 minutes per session and at least 3 times a week. The study began with following 20 children, however only 14 qualified according to the above-mentioned criteria. Some of the children were taking medication for their condition, but none started medication after the beginning of program. Medication needs after the program was not yet investigate.

Results

1. All participants showed marked improvement in all four categories: attention, hyperactivity (mainly with ADHD conditions), behavior and academics.
2. The improvement based on the self report scale for the entire group was 65.9%.
3. The average reduction in symptoms based on the self report scale was 67%.
4. The average improvement in training scores on the SB program was 66%.

Summary

1. SB has proven to be efficacious it treating attention deficit disorder.
2. There seems to be a strong correlation between improvement in scores of the SB program and improvement in symptoms.
3. A subsequent study using a control group may further validate the efficacy of the program.
4. The results with children diagnosed with CAPD (central auditory processing disorder) may be an indication of the usefulness of the program in treating such conditions.

[Tables](#)