



CASE DETAILS

PROFILE: Sam, a radiologist, suffered a stroke at the age of 59, that resulted in severe cognitive impairments. Specifically, memory and processing abilities were most symptomatic.

“ I was unable to diagnose cases when we met and now my ability to diagnose has improved dramatically through training. There have been improvements in visual processing and memory. I noticed for the first time since the injury that the anatomical knowledge that appeared to have been lost (as a radiologist), was suddenly regained. ” -Sam

EVALUATION RESULTS:

- Working memory increased from the 1st to the 36th percentile.
- Visual Processing improved 23 percentile points .
- Logic and Reasoning increased from the 3rd to the 19th percentile.

COGx PROGRAM

Sam began training with his cognitive skills between the .01th percentile and 5th percentile. The following results and testimonial are after 90 hours of COGx individualized cognitive training.

PREVIOUS TREATMENTS

Sam was referred to COGx after years of computer-based cognitive remediation therapy that had failed to show any gains in his cognitive skills or ability.

COGx APPROACH & RESULTS

At the beginning of training, Sam would consistently say “I don't know” to just about anything he was asked. His injury had robbed him of a hard-earned medical pedigree and a fulfilling life he cherished, and SS was understandably discouraged, having spent several years attempting to recover his skills in vain.

By the midpoint in his training, Sam was rarely, if ever, saying “I don't know.” Now, if he really doesn't know or is confused, SS typically defaults to humor rather than frustration, which is a testament to the confidence he has restored in his intellectual ability as well as the social growth he has made.

Increased interpersonal confidence has been a definite byproduct of training. Sam's wife reports that this has tremendously improved at home and in social interactions. As reported by those close to Sam, this is the improvement they value most.

“We wouldn't have been able to travel to India recently, without the progress we have seen through training with COGx. Also, Sam's ability to interact with technology (iPhone) was recovered for the first time since the stroke. This skill was regained as the instructions were memorized and understood.” – Sam's Wife

COGNITIVE REMEDIATION

TRAUMATIC BRAIN INJURY



CASE DETAILS

PROFILE: Nora, sustained a severe traumatic brain injury (TBI) from an automobile accident in 2012 when she was 15 years in age. The injury principally affected her memory.



Gains in cognitive therapy transferred to other aspects of NB's life and recovery. Her speech and walking ability dramatically improved immediately following the start of COGx therapy. As concentration improves so does her ability to walk, which requires tremendous focus. – Nora's Dad

Nora spontaneously recovered memories following the start of COGx therapy. COGx has been the best support system during this arduous rehabilitation process



– Nora's Mom

COGx Program

Nora communicated her desire to enhance her memory, so that she can return to and complete high school. Nora received 4 hours/week of individualized cognitive training using the COGx methodology. Upon enrollment, she was 2 years post-injury

COGx APPROACH & RESULTS

Nora's training program was customized to address her profound memory impairment. Initially, Nora struggled to comprehend both the theory and practice/implementation of the Memory Palace, a long-term memory technique that requires creative/imaginative thinking and visualization. Specifically, Nora had difficulty devising concrete visual cues to represent the material she had to learn. She also had trouble utilizing vivid language (i.e., fabricating details that appeal to the 5 senses). Nora's language failed to activate the concept, or structure she had to recall. To redress this, Nora was 1) taught that she can rely on phonetics/rhyming when developing visual cues/symbols and 2) was given a list of action words and adjectives to facilitate the integration of imagery into her Memory Palace. Memory Blocks also were used in conjunction with the Memory Palace to remedy her frequent frustration, as Nora is a tactile learner. Nora was able to draw her Memory Palace and manually move the blocks on the image to stimulate visualization.

Nora was periodically asked to recall the Memory Palaces she had constructed a few months prior. On these occasions, Nora demonstrated her reliance on the techniques. She and her parents were stunned with how much information she had retained. Nora was able to recall specific dates, names, concepts, and definitions both accurately and expeditiously.

Nora currently is enrolled as a part-time student. She is taking a Literature and a U.S. History course, both of which require extensive reading and memorization. She is independently devising Memory Palaces to aid retention of the course material. Nora's mother reports that she is receiving superior grades.



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PROFILE: Jim, suffered ABI in 2010 at the age of 28 years old. Injury resulted in a bifrontal contusion, sinus fracture, and optic nerve damage resulting in right-eye blindness.

“ Cognitive training helped me a lot. I wouldn't be where I am without it. On a scale of one to 10, I'd give it an 8 in terms of how much it helped me. Since training, it has been a lot easier to get up and do things. If given the chance, I would definitely do it again. ” - Jim

EVALUATION RESULTS:

- Short-term & Long-term Memory lifted out of the single digits, improving 32 and 27 percentage points respectively
- Visual Processing improved 40 percentage points
- Decision Speed now above average at 61 percent

COGx PROGRAM

Jim received individualized cognitive training using the COGx methodology 4 hours/week for 60 hours. At the point of enrollment, Jim was several years post-injury and continued to struggle with significant cognitive impairment.

PREVIOUS TREATMENTS

Following his injury, Jim received speech therapy to address swallowing issues and difficulties regaining certain areas of speech. Jim also received physical therapy and vision therapy.

COGx APPROACH & RESULTS

At the start of training, exercises were exceedingly difficult for Jim to grasp and needed to be modified extensively. Jim's mental inflexibility made it difficult at times for him to take feedback and he frequently grew angry and confused throughout sessions. Fortunately, Jim also possessed perseverance and a sincere desire to improve. This allowed Jim to really engage throughout sessions and push through periods of cognitive resistance.

Modifications were made to make exercises less tasking and to help Jim understand what was being asked of him. Memory exercises typically required the most customization, as Jim also struggled with anomia. Jim lacked insight and understanding into how his memory was working other than that it was routinely failing him.

Over time, Jim adopted strategies and began to integrate these on his own as the opportunity arose throughout sessions. Jim not only improved his cognitive ability but he began to understand how his memory worked and how to work with it.

With Jim's short-term memory being as weak as it was, following multi-step directions was a challenge. While still an ongoing challenge, Jim's ability to follow directions has noticeably improved in stride with his memory. Most importantly, Jim was able to suggest ways a given exercise was helping him improve outside of training.

“Knowing Jim and the severity of his deficits, and the difficulty involved with re-developing the skill of initiation, these gains are quite significant. In Jim's case, it will likely mean the difference between being able to live independently or not.” -Daniel Seger, M.S., CBIS (Case Manager)



CASE DETAILS

PROFILE: Jill, an 18-year-old female high school junior enrolled in COGx for a 60-hour training program. Jill enrolled due slow processing speed and a learning disability. Jill also reported occasional “brain fog” that is a result of a medical condition (POTS).

“ COGx was great test prep. It helped me to do surprisingly well on my practice ACT. - Jill

Jill feels she got a lot out of training and even wanted to continue after her program was completed. ” – Jill’s Parent

COGx APPROACH & RESULTS

Jill's main goals entering into the COGx training program were improved processing speed and memory, with a particular focus on improving speed of work. As one might predict, the memory improvements came in short bursts, as Jill familiarized herself with new techniques, before eventually perfecting them. We covered several such techniques, which Jill has learned to apply to relevant education and real-world scenarios. Processing speed improvements, on the other hand, came slowly and as a result of constant drilling.

Jill began learning memory techniques with the linking and number peg methods. It was useful to use these two techniques in parallel, as they rely on similar principles of visualization. However, where Jill excelled at linking, her excellent numeric fluency made it difficult for her to learn the number peg system (since she was already skilled at remembering numbers without a technique). Still, Jill's imagination and quick creative thinking became strong assets here; she was able to quickly invent stories to connect — and thus, remember — numbers, dates, objects, places, and events. Jill also learned the Gettysburg Address with the method of loci, a related, but distinct technique.

In addressing Jill's memory, we also worked on processing speed by progressively lowering the amount of time she had available to remember the necessary information. This, in addition to other timed drills, has led over time to a significant improvement in Jill's ability to quickly process and respond to information. Most importantly for practical purposes, the combination of memory improvement with processing speed gains should improve Jill's speed of work, including completing assignments more quickly. In using memory techniques, she should be able to reduce the on-line cognitive burden of writing, relying instead on previously encoded information. Meanwhile, her newly improved processing speed will allow her to more quickly act upon that knowledge.



CASE DETAILS

PROFILE: Marc is a 16 year old male diagnosed with Pervasive Developmental Disorder, Not Otherwise Specified. Marc struggled with high level of distractibility, difficulty regulating inhibiting behaviors, weak reasoning skills, and slow processing.



The cognitive assessment has accurately captured Marc's deficits as well as his gains over time. The gains are more impressive when we consider that the scores measure progress against peers. Without intervention the large initial gap between my son and his typical peers would have only grown over time as children make rapid cognitive gains during the key formative years of their lives. I am very impressed. These results are wonderful!



– Marc's Parent

COGx APPROACH & RESULTS

Marc's program has been individualized to target his needs across multiple cognitive and behavioral domains including attention, processing speed, and memory. Marc has made meaningful gains (measured clinically and empirically) across these key cognitive areas, especially processing speed, short-term memory, and reasoning skills. In several areas, skills improved by one standard deviation or more. As reported by Marc's mother, these gains have made a remarkable difference in his quality of life and ability to interact with peers and adults.

Marc's parents attribute his progress to the effectiveness of COGx's individualized approach, noting that "it addresses exactly what he needs precisely because it has been so customized for him and has evolved with him." Beyond the technical aspect of customizing exercises, in-person training allowed Marc to develop a relationship and dynamic with his trainer, who was then able to keep him actively engaged, focused, and encouraged. One approach used by Marc's trainer was a point system; Marc would acquire points for each task he did his best, followed directions, and stayed on task. This component of training kept Marc motivated to work hard and stay on task. The points also allowed the trainer to stay objective in granting rewards, and not letting him work under his capacity level.

The gains of training are evident to Marc's mother, who has observed that he is now able to answer complex questions and maintain topics during conversations. "These kinds of things were difficult for Marc before he started cognitive training. I see great gains in verbal reasoning, processing information as well as retaining and retrieving facts. Multi-step tasks, therefore, have become easier for Marc." According to his mother "the interventions at COGx have addressed Marc's main cognitive constraints and have helped him broaden his mental abilities." In her view, "medications would not be able to achieve this as they tend to increase his tendencies to perseverate on narrow set of topics."



CASE DETAILS

PROFILE: Karly, a 17-year-old female high school junior, enrolled in COGx through a school partnership for a 60-hour training program. Karly's program was designed to help Karly compensate for "brain fog" stemming from a medical condition; improve processing speed (esp. reading and comprehension), and increase stamina.



I find I'm much better at processing and remembering equations in pre-calculus. - Karly

Karly has definitely noticed that she has more stamina. ” – Karly's Parents

COGx APPROACH & RESULTS

Karly's overarching goal with COGx was to improve her stamina and address her "brain fog". In terms of cognitive skills, this meant prioritizing memory, processing speed, and sustained attention. As Karly became proficient in applying memory skills with no time pressure, I began to encourage her to do so more quickly, using a metronome or stopwatch as appropriate. We also used exercises designed to target processing speed more directly, in a variety of domains: visual search, math, and verbal manipulation. In combination, these approaches resulted in modest processing speed improvements, and large improvements in memory, all of which produce gains in stamina.

Towards the beginning of her program, Karly made rapid progress in the first memory technique we covered: linking. This was done alternatingly with images on cards, single words, and story elements, to maximize learned versatility. Towards the end of our program, Karly had an insight: when her stories were set in a particularly dark or funny (or both) tone, her memory for them improved. This sort of reflection is evidence that she took the program seriously and applied the results.

The next technique we covered, the number peg system, was a great fit for Karly, given her natural affinity for numbers. Although the system we provide is functional as-is, it is also limited. To give enough flexibility to remember something as difficult as 100 digits of pi, Karly had to expand the system. She did this without my prompting, which makes it all the more memorable for her. We also covered the memory palace technique, with which Karly learned the Gettysburg Address.

Karly's improved stamina, likely a result of enhanced processing speed combined with a newfound ability to pre-load cognitive effort. That is, with her new memory skills, she can commit material to memory when she is feeling most able to do so, and later retrieve that information for use, without much depleting her limited store of focus. In a sense, we've sidestepped the brain fog issue while also taking steps to mitigate it.