



## CASE STUDY A 10-year-old boy with learning disabilities and speech and language difficulties due to birth trauma

These case studies, each submitted by a Certified HANDLE® Practitioner, demonstrate outcomes achieved through implementation of an individualized HANDLE program. The acronym stands for the Holistic Approach to NeuroDevelopment and Learning Efficiency. The HANDLE paradigm for understanding behaviors and their root causes is thoroughly explained in *The Fabric of Autism: Weaving the Threads into a Cogent Theory*, by Judith Bluestone, the creator of HANDLE and the founder of The HANDLE Institute. For intimate insights into client and family experiences of HANDLE, see *The Churkendoose Anthology*, with commentary by Judith Bluestone.

For each of the clients in these Case Studies, the practitioner began with a comprehensive assessment, the findings of which led to a Neurodevelopmental Profile, which in turn formed the basis for a program of activities complex in their neuroscientific premises and very simple to implement. Thereafter the client's program was modified about monthly in accord with changes achieved in the interim. Each client participates in twelve to fifteen activities regularly; the practitioner, in writing up the case study, names those activities in brief without the full details and explicit information each client-family receives in why and how to implement the program. Go to [www.handle.org](http://www.handle.org) for more information.

### Referral Concerns

The client, a good-natured boy with a delightful sense of humor, was first seen at The HANDLE Institute in August 1999. Academic concerns, lingering despite intensive tutoring and previous therapies, motivated the client's mother to seek help from HANDLE. The client was about a year behind grade level in reading. Sequencing, memorizing and writing were all challenges for him. The client, primarily, wanted to improve his eye/hand coordination so he could play ball sports.

### Background Information

Three weeks late, the client was delivered via emergency C-section when doctors discovered the umbilical cord wrapped around his neck following days of labor. Despite his weighing in at a whopping twelve pounds, his APGAR at one minute was only four and his blood oxygen level was dangerously low. The client spent seven nights in the hospital, several in intensive care before his parents could take him home. The client's mother recalls

her son as an "easy baby" who breastfed well for a year and a half. His progression through most of the basic gross motor developmental milestones was on target. His teeth came in very early and the teething period was rough on the entire family. He was a "mouther," putting almost everything within his grasp into his mouth. Speech challenges as a youngster prompted extensive speech therapy to help him master nine sounds that he had not been able to produce. The client attended a small private school and worked regularly with tutors. In first grade, the client received additional therapy for the "r" sound at school. He was in a special class that employed Lindamood-Bell techniques, which emphasize the "feel" of sounds as produced by the mouth to promote phonemic awareness. Prior to seeking help from The HANDLE Institute, his family utilized several other therapies to help the client through his challenges. In second grade, the client received vision therapy and also underwent a naturopathic treatment (NAET) to eliminate his many allergies.

## Observations

Ten years following his traumatic birth, the client presented with a variety of learning challenges. During the evaluation, the client entered willingly into the spirit of playfulness and competition. An understanding of the root causes of his academic difficulties emerged. Despite vision therapy, the client did not have adequate visual tracking skills. His eyes tended to jump while tracking an object, and he needed a fair amount of help to discern differences on a picture completion task. Additionally, the client had not achieved dependable binocular function; with red/blue glasses on, he saw red and blue halves on white paper indicating that his eyes were not working well together. On a task called finger tapping, where the client copies a simple pattern of touching the thumb to each finger in order, the client first completed the pattern in reverse. When changed to a skip-finger pattern, he had more difficulty with the sequence, and even demonstrated some trouble finding the fingers themselves. On an ear/nose touching task, which involved midline crossing, he also had trouble locating his body parts. Throughout the assessment, the client's speech was slow and deliberate, as if he needed to consciously conceive the sounds before he spoke them. Repeating a string of nonsense syllables on an auditory task proved very challenging for the client. The client demonstrated a considerable amount of "overflow" movement. That is, when asked to track an object with his eyes, his head moved too. When performing a finger tapping exercise with one hand, the other did not remain still. His whole body moved as he wrote on the chalkboard with both hands at the same time. Multi-tracking, or doing more than one thing at a time, proved difficult for the client. When trying to engage in conversation while performing a task that requires strong connections between the two sides of the brain (interhemispheric integration), he tended to stop either talking or doing the task.

## Conclusions

At a foundational level, the client's learning was compromised by a weak vestibular system (inner ear). Among other things, the vestibular system supports the dynamic use of our eyes and muscle tone. The fine muscle control necessary for the client's eyes to work together (binocularity) was lack-

ing and his eyes were sensitive to bright light. This, together with poor visual tracking, helps explain why he often skipped small words while reading. Without first strengthening his vestibular system, the client was not able to fully realize the benefits of his previous vision therapy program, and so his reading problems persisted.

Sensation of the body in space, called proprioception, is also supported by the vestibular system. Difficulty locating body parts on specific assessments validates proprioceptive irregularities. If the brain does not know where a specific body part is, it cannot move appropriately without monitoring the movement through conscious and cognitive means. Underdeveloped proprioception in the body parts required for articulation can interfere with a person's inherent ability to enunciate and this difficulty was evident in the client's speech difficulties. Additionally, reports of thrashing in his sleep, falling out of bed and needing to listen to tapes to fall asleep supported the findings of a weak proprioceptive sense.

One factor in good language function is good auditory function. Adding to the client's speech and reading problems was a deficit in auditory sequencing, as evidenced by his trouble reproducing nonsense syllables. Again, the abilities to filter and focus sound, sustain auditory attention, and process auditory input are all functions regulated by the vestibular system.

The client demonstrated an immaturity of differentiation. That is, the ability to move only the specific body part we mean to move, inhibiting overflow movements. Differentiation is a precursor to establishing a controlling hemisphere of the brain, and in turn, to efficient communication between the two sides of the brain. Weakness in the integration of the brain hemispheres can negatively affect multi-tracking, and academics at all levels.

## Recommendations

From a holistic and developmental perspective, weak aspects of the client's nervous system needed development, to allow lower-level functions to become automatic, thus freeing mental energy for higher-level functions such as reading, writing and speaking. Carefully selected activities, such as drinking through a crazy straw, catching

a suspended glow ball, hula hoop games and a specific massage technique, were part of the client's individualized program. Vestibular functioning, interhemispheric integration, proprioception, differentiation and binocularity were all targeted for gentle enhancement.

### **Follow-Up**

At a one-week follow-up session designed to ensure that the activities were being performed correctly, the client reported that he was becoming more skilled with the activities. One month later an interhemispheric writing task, activities to enhance math comprehension, and an activity to further develop differentiation were added to supplement his basic program. An additional recommendation for cranio-sacral therapy, as an adjunct to his HANDLE work, was made to help alleviate the extreme sensitivity of his face and scalp.

Throughout his progression of his HANDLE program, the client's fine motor control and printing became noticeably better. Refinements in his visual functioning developed; he could

sustain his visual activities for longer periods of time and reading comprehension improved. The client completed his cranio-sacral treatments, during which tensions in his skull shifted dramatically. Positive gains continued. According to a school test, in the first four months of the client's HANDLE program, he had made reading progress equivalent to one year. His fine motor ability continued to improve and his memory flourished. He was seemingly more aware of the things going on around him and organization was less of a problem. His mother reported being pleased at his enhanced ability to clean his room. The client gave a gleeful self-report of "I can catch a ball!" His new-found ability to kick the soccer ball opened up opportunities to play positions other than goalie. The client's mother reported that not only was her son able to fulfill his desire to play basketball, he even participated in exhibition game at the Key Arena! His skill at throwing and catching a baseball surprised everyone, as this was something he and everyone who knew him had previously considered dangerous.

The HANDLE Institute presents these case studies to demonstrate the successes of the HANDLE approach and pique the interest of researchers and funders in engaging in clinical studies to further examine the efficacy of these interventions. For more information about The HANDLE Institute, go to [www.handle.org](http://www.handle.org).



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