

Cognitive rehabilitation after TBI via retinal stimulation: a twelve-year case study.

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INTRODUCTION/BACKGROUND

This is a twelve-year self-reporting case study of traumatic brain injury and recovery, executed by a professor of artificial intelligence and cognitive science. For eight years the subject suffered from profound difficulties with the forming of the basic symbols of thought, balance, seizures, nausea, inability to initiate action, inability to make decisions, sleep disturbance, tunnel-vision, motor-coordination, loss of spiritual life, planning, understanding time, etc. He was told that he would never recover. Then within weeks of starting treatment consistent with neurodevelopmental optometry and clinically applied neuroscience (CAN) he was vastly improved, and—ultimately—fully recovered.

SIGNIFICANCE OF WORK AND HYPOTHESIS

The hypothesis is that neurodevelopmental optometric techniques, combined with CAN, can allow full recovery of certain classes of traumatic brain injury patients, even after almost a decade of persistent, and global, symptoms. This case supports part of the hypothesis by establishing a proof-of-concept instance. More importantly the work is significant in the uniqueness of its decade-long documentation, and the extreme detail in the recording of specific symptoms across a broad constellation of compromised cognitive and motor capabilities. Full recovery was effected, documented, and shown to be entirely consistent with the principles of the treatments.

MATERIAL AND METHOD

Self-reporting documentation of the trauma and recovery totaling 1,200 pages of documentation over twelve years was kept. Two orthogonal documentation sets were kept for each of the progress

of deterioration and the process of recovery: (a) the time-sequenced narrative, and (b) the concept-structured collection of symptom descriptions, and the resolution of those symptoms.

Neurodevelopmental optometric testing, prescription eyeglasses and paper-and-pencil CAN instruments were used.

The subject was a Northwestern-educated professor of Artificial Intelligence and Cognitive Science, with knowledge of the cognitive structure of the brain, and computational models, and trained as a careful observer of the details of cognition.

RESULTS

As is consistent with standard medical practice, the subject was repeatedly told, after the initial two-year recovery window, that he would never get better—that no one ever did, and that he would need to develop strategies for living with his permanent condition. Then, after eight years, taking advantage of the new science of brain plasticity, and both neurodevelopmental optometric techniques and CAN the subject recovered. The most significant recovery took place within *two weeks*. This case is unlikely to be proven unique. The extensive documentation makes the case hard to discount.

Empirical neurodevelopmental optometric testing showed significant clinical results.

CONCLUSION

Neurodevelopmental Optometric techniques and Clinically Applied Neuroscience have been shown to be consistent with dramatic recovery in a classic traumatic brain injury patient, even after almost a decade of stagnation. Such recovery is entirely consistent with the new concepts of brain plasticity. That such recovery is also possible for some subset of the more than three million brain injury patients reported each year in the United States alone is likely, and if so, this is a dramatic result. In the original documentation strong similarities between TBI and attention disorders are also found, suggesting even broader applicability.