

Cognitive Remediation for Traumatic Brain Injury (TBI)

Traumatic brain injury (TBI) is a leading cause of death among persons under 35, and approximately 80,000-90,000 persons suffer long term disability following a head injury (Chua et al, 2007). The Brain Clinic in NYC offers Cognitive Remediation as an effective, non-pharmaceutical treatment for the long-term effects of TBI.

The most common consequence of traumatic brain injury is cognitive impairment. Dependent on the nature and the severity of the injury, such impairment may involve acquired deficits in attention, organization, memory, ability to solve new problems, monitor one's own behavior and emotions. Additionally, head injury and the resulting deficits can lead to depression and anxiety. The primary mode of therapy for the long-term effects of head injury is cognitive remediation.

Cognitive remediation, also known as neuropsychological rehabilitation, is a therapeutic approach targeting specific cognitive functions, such as attention, organization, planning or memory that constitute an individual's weaknesses or impairments. A course of cognitive remediation first consists of neuropsychological testing, which is needed to determine the individual's specific areas of weakness. Then a set of structured exercises is designed to develop the deficient areas and to introduce more effective ways of compensating for these deficits. Such exercises may be delivered via a computer program, individual or group activities, or by way of exercises individually tailored around personal daily activities. In addition, patients are taught compensatory strategies designed to work around areas that cannot be remediated. The length and frequency of the treatment depends on the nature and extent of the deficits.

A recent review of the state of the cognitive rehabilitation literature by Chau and colleagues (2007) suggests that the most effective programs are those that are more intensive (meeting multiple times a week and for longer periods of time) and that start soon after the trauma. A number of cognitive remediation techniques tailored to the specific needs of persons with head injuries have emerged in the past several years. One such technique is errorless learning, which involves providing a person with a head injury with the correct answers until they master the new information, while not allowing them to make mistakes. While normal people can learn from their mistakes, this ability is commonly impaired in someone with a head injury. A number of effective exercises have been developed for improving specific cognitive deficits, and these can be combined into individualized programs targeted at a patient's particular impairments. Supplementing cognitive remediation with pharmacological treatment to improve mood and reduce fatigue has also been shown to be effective.

The gains made during training have been shown to last after the training has been discontinued, and to generalize to daily activities. A recent review of literature by Geusgen et al (2007) in the Journal of Rehabilitation Medicine found that most studies investigating generalization of gains achieved in cognitive remediation treatment found at least some improvements on unpracticed tasks, and laboratory simulated and real-world daily tasks.

Head injury can be a devastating event that impacts many areas of one's life. Cognitive remediation is a valuable tool in the treatment of traumatic head injury. A review of several cases of remarkable recoveries from serious head trauma, conducted by Larry Schuetz (2007) provides both insight and hope for patients with similar conditions. He found that the patients that made the most dramatic recoveries were those who continued to improve, elaborate, and rely on learned cognitive compensation strategies.

Ongoing reliance on and elaboration of these strategies allowed such individuals to effectively manage the impact of their disability, and lead successful lives.

References:

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