



Definition and Practice of Cognitive Rehabilitation

- **Cognitive rehabilitation is a systematically applied set of medical and therapeutic services designed to improve cognitive functioning and participation in activities that may be affected by difficulties in one or more cognitive domains.**

Diagnosis and treatment of cognitive dysfunction should be undertaken by clinicians who have fulfilled the requirements for professional training and certification in their respective medical or allied health disciplines, such as speech/language pathology, clinical neuropsychology or occupational therapy.

Collaboration between disciplines is advised and encouraged.

- **Impairments of cognitive function are among the most common and important problems that lead to disability after acquired brain injury.**

Individuals who sustain brain injuries frequently have difficulties in arousal, attention, concentration, memory, problem solving, decision making, insight and other areas of cognition that impede their ability to function in everyday activities. There are virtually no areas of the brain that do not impact cognitive function.

Treatment of cognitive dysfunction is central to the treatment and recovery of individuals with brain injury because of the widespread impact of cognitive deficits on safety, functional independence, productive living, and social interaction.

Evidence Supporting the Use of Cognitive Rehabilitation in Treating TBI

- The National Institutes of Health (NIH) Consensus Statement on Rehabilitation of Persons With Traumatic Brain Injury (TBI) recommended in 1998 that “rehabilitation services should be matched to the needs, strengths, and capabilities of each person with TBI and modified as those needs change over time; and rehabilitation of persons with TBI should include cognitive and behavioral assessment and interventionⁱ.”
- Experts from the Brain Injury Interdisciplinary Special Interest Group of the American Congress of Rehabilitation Medicine published an evidence-based review of the cognitive rehabilitation literature in 2000ⁱⁱ and a comprehensive updated review in 2005ⁱⁱⁱ. The review encompassed 171 articles in the first report and an additional 87 studies in the update. The reviews were not restricted to traumatic brain injury, but also included treatments studied in stroke survivors. Overall, there were 46 Class I studies (prospective, randomized controlled methodology) and 43 Class II studies (prospective cohort studies, retrospective case-controlled studies or series with well-designed controls).

For the Class I studies involving both patients with stroke and patients with traumatic brain injury, 78.7% of the comparisons demonstrated a benefit of cognitive rehabilitation over the alternative treatment. The reviewers concluded that “there is substantial evidence to support cognitive rehabilitation for people with brain injury.” The reviewers further concluded, “Future research should move beyond the simple question of whether cognitive rehabilitation is effective, and examine the therapy factors and patient characteristics that optimize the clinical outcomes of cognitive rehabilitation^{iv}.”

- Evidence-based cognitive rehabilitation treatments include strategy training for mild memory improvement, strategy training for post-acute attention deficits, and interventions for functional communication deficits^v.
- In addition, numerous studies of comprehensive approaches support the effectiveness of a programmatic approach to cognitive rehabilitation for people with TBI, including those who have been unable to resume effective functioning several years after injury^{vi}.
- According to the recent RAND report on psychological and cognitive injuries of OEF/OIF, there is substantial scientific and medical literature attesting to the value of cognitive rehabilitation^{vii}.
- The report notes research findings showing that patients who receive intense cognitive rehabilitation show clinically significant improvement in their community functioning compared with patients who receive standard neurorehabilitation^{viii}.

ⁱ Rehabilitation of Persons With Traumatic Brain Injury. NIH Consensus Statement. 1998 Oct 26-28; 16(1); 1-41.

ⁱⁱ Cicerone KD, Dahlberg C, Kalmar K, et al. Evidence-based cognitive rehabilitation: recommendations for clinical practice. *Arch Phys Med Rehabil.* 2000; 1596-1615.

ⁱⁱⁱ Cicerone KD, Dahlberg C, Malec JF, et al. Evidence-based cognitive rehabilitation: updated review of the literature from 1998 through 2002. *Arch Phys Med Rehabil.* 2005; 1681-1692.

^{iv} Ibid.

^v Ibid.

^{vi} Gordon WA, Zafonte R, Cicerone K, Cantor J, Brown M, Lombard L, Goldsmith R, Chadna T. Traumatic brain injury rehabilitation state of the science. *Amer J Phys Med Rehabil.* 2006; 85(4): 343-82.

^{vii} Tanielian, Terri L. et al. Invisible wounds of war: psychological and cognitive injuries, their consequences, and services to assist recovery. RAND Corporation – Center for Mental Health Policy Research: A Joint Endeavor of RAND Health and the RAND National Security Research Division. 2008.

^{viii} Cicerone KD, Mott T, Azulay J, Friel JC. Community integration and satisfaction with functioning after intensive cognitive rehabilitation for traumatic brain injury. *Arch Phys Med Rehabil.* 2004; 85: 943-50.

###

This document was assembled by Laura Schiebelhut, Director of Government Affairs, Brain Injury Association of America, (703) 584-8637, lschiebelhut@biausa.org.