Rehabilitation (Neuropsychology)

Authored by

mohammad looti

November 19, 2022

Rehabilitation of sensory and cognitive function typically involves methods for retraining neural pathways or training new neural pathways to regain or improve neurocognitive functioning that has been diminished by disease or traumatic injury. Three common neuropsychological problems treatable with rehabilitation are attention deficit/hyperactivity disorder (ADHD), concussion, and spinal cord injury.

Methods

Speech therapy, occupational therapy, and other methods that "exercise" specific brain functions are used. For example eye-hand coordination exercises may rehabilitate certain motor deficits, or well structured planning and organizing exercises might help rehabilitate certain frontal lobe "executive functions" of the brain following a traumatic blow to the head.

Brain functions that are impaired because of traumatic brain injuries are often the most challenging and difficult to rehabilitate. Much work is being done in nerve regeneration for the most severely damaged neural pathways.

Neurocognitive techniques, such as cognitive rehabilitation therapy, provide assessment and treatment of cognitive impairments from a variety of brain diseases and insults that cause persistent disability for many individuals. Such disabilities result in a loss of independence, a disruption in normal childhood activities and social relationships, loss in school attendance, and educational and employment opportunities. Injuries or insults that may benefit from neurocognitive rehabilitation include traumatic and acquired brain injuries (stroke, concussion, neurosurgery, etc.), cranial radiation, intrathecal chemotherapy and neurological disorders such as ADHD. The rehabilitation targets cognitive functions such as attention, memory, and executive functioning (organization, planning, time management, etc.). Programs are developed to address an individual's challenges after a baseline assessment of abilities and challenges.

ADHD

There are many therapists and interventions for rehabilitation of children and adults who suffer ADHD, many of whom are parents of children with this problem. The most frequently used treatment method involves drugs such as Ritalin, and many argue that drugs do not rehabilitate but only relieve ADHD sufferers (and those around them) from the social and behavioral disruptiveness caused by attention deficiencies and hyperactive behavior.

However, many others argue that such symptom relief enables the sufferer and those around him or her to improve cognitive and motor functioning and controls through standard educational and social training that would otherwise be impossible.

The next most common rehabilitation approach for ADHD uses various and specific cognitive/behavioral methods to help establish new brain-behavior relationships or functioning that is impaired in sufferers of ADHD.

Concussion

Much research and focus has been given to concussion suffered frequently by athletes. While the severity of brain trauma has been standardized for immediate "sideline" assessment, much work needs to be done to understand how to rehabilitate or accelerate the rehabilitation of athletes' brain function following serious concussion--where consciousness is lost for a few moments or more. Currently, rehabilitation of concussive brain injury is based on "quiet" time without jarring motions that enables the brain to "heal" on its own. Rehabilitation research and practices are a fertile area for clinical neuropsychologists and others.