



What to Know About Neurofatigue after TBI

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Neurofatigue is one of the most common symptoms after sustaining traumatic brain injury. From mild (concussion) to severe TBI, fatigue can be all encompassing and debilitating to all facets of functioning. It affects cognitive participation and often leads to feelings of exacerbated pain and depression. Neurofatigue influences an individual's motivation and activity level and can lead to lessened participation in social and family activities. Individuals often feel overloaded or overstimulated, leading to a physical and emotional shut down. Often, no amount of sleep or rest will abate the symptoms. It can negatively affect relationships and quality of life. Work, school, and all activities of life can be affected. Fatigue after TBI affects around 65 percent of individuals after injury (Eisenberg, Meehan, & Mannix, 2014). It can last for a few weeks, months, or become a lifelong struggle.

The following are key points professionals need to consider in order to recognize, diagnose, and manage neurofatigue and its resulting symptomology.

WHO IS AFFECTED BY NEUROFATIGUE?

Neurofatigue does not discriminate. Anyone who has sustained a TBI or concussion of any severity can struggle with fatigue symptoms after an injury. These symptoms can last for days or up to several months from the time of injury. To

date, there have been no distinguishable differences for gender as to who is more at risk (Duncan, Wu, & Mead, 2012).

WHAT CAUSES NEUROFATIGUE?

Neurofatigue is caused by the trauma the brain endured during injury. When the brain is jolted, the brain's connections are damaged causing disruption to the circuitry system. This communication system that the brain uses to communicate with itself and all other parts of the body, is slowed, causing the individual to use much more effort to complete the same tasks as before. These damaged connections can cause slowing of physical, cognitive, and emotional abilities (Johansson & Ronnback, 2014).

TYPES OF NEUROFATIGUE:

Fatigue is a feeling of weariness, tiredness, and lack of energy. After a TBI, an individual may experience a feeling of physical fatigue as well as mental fatigue. Neurofatigue has two known types: Cognitive and Pathological fatigue. Individuals may suffer from one or both of these types.

COGNITIVE FATIGUE:

The disruption to the brain's circuitry system causes the brain to work harder at certain tasks and it must expend copious amounts of energy to keep up. Activities such as reading, studying, using a computer or watching television, quickly cause fatigue. Typically, there is a disproportionately long recovery time needed to restore these energy levels after cognitive exhaustion has set in (Johansson & Ronnback, 2014).

PATHOLOGICAL FATIGUE:

This is a feeling of physical fatigue that is felt after little effort is expended doing minimal daily activities. Everyday errands and tasks can be extremely taxing. Routine tasks, such as grocery shopping or attending a class, are exhausting. This type of fatigue is not responsive to sleep or rest.

INJURY SEVERITY PLAYS A ROLE:

Individuals that have suffered more severe injuries often find that neurofatigue does not improve over time. On average, 58 to 73 percent of individuals reported that fatigue negatively impacts their lives more than five years after sustaining a severe TBI (Bushnik, Englander, & Wright, 2008; Olver, Ponsford, & Curran, 1996). However, on average, 62 percent of those who have suffered minor injuries also report continued problems with fatigue 10 years after injury (Zumstein et al., 2011).

CO-OCCURRING DISORDER:

Neurofatigue can be associated with anxiety, depression, pain, sleep disturbance, cognitive impairment, and mood disorders. Any of these issues may occur with neurofatigue, only exacerbating its effects. Due to the stress caused by these symptoms, self-medicating with substances can also occur. Seeking professional treatment for these issues is

strongly advised.

WHO CAN HELP NEUROFATIGUE SYMPTOMS?

Visiting with a physiatrist specially trained in TBI can shed some light on how to treat the symptoms of neurofatigue. While there is no cure, these professionals have methods to help lessen the symptoms and assist in getting individuals back to their normal daily activities.

POTENTIAL TREATMENTS:

Overall, time is the best medicine for neurofatigue symptoms. Repair of the damaged connections within the brain takes time and no estimation of that time frame has been determined. Pharmaceutical options include modafinil, amantadine, or even some SSRIs. Mindfulness-Based Stress Reduction (MBSR) and Blue Light Therapy are treatments being explored to reduce daytime sleepiness and fatigue symptoms (Johansson, Bjuhr, & Ronnback, 2012). Research has also noted the benefits of exercise and therapy to assist with the feelings of chronic neurofatigue (Englander, Bushnik, Oggins, & Katznelson, 2010).

As a common symptom of TBI, neurofatigue can only be managed, not cured. The first step after injury is to seek a physiatrist who specializes in TBI to render a diagnosis and provide counseling on potential treatments. These professionals have the knowledge and resources to help manage these symptoms. It is advised to visit with a specialist as soon as possible after injury for diagnosis and treatment. Early detection is essential to optimal outcomes and lessened symptoms.

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Brooke Luckhardt, MS, CBIS obtained her Masters in Forensic Psychology at Walden University. She specializes in traumatic brain injury and has worked with the physicians at Associates in Physical Medicine and Rehabilitation, P.C. in Ypsilanti, Michigan for 24 years. She has been a Certified Brain Injury Specialist through the Brain Injury Association of America for the last thirteen years. She is a member of the St. Joseph Mercy Hospital Concussion Committee in Ann Arbor, Michigan and is cofounder of the Ann Arbor Concussion Clinic. Brooke is a member of the Society for Police and Criminal Psychology, the National Society of Leadership and Success, and the American Congress of Rehabilitation Medicine. She is an expert trainer for the American Institute for the Advancement of Forensic Studies and serves as an advisory board member for the Forensic Behavioral Health Program at Concordia University in St Paul Minnesota. She has been a co-author on multiple peer-reviewed articles relating to Traumatic Brain Injury and has lectured nationally on TBI and criminality.