NRS
NEUROPSYCHOLOGY
REHABILITATION
SERVICES

Rehabilitation for Cognitive, Emotional and Behavioral Brain Function

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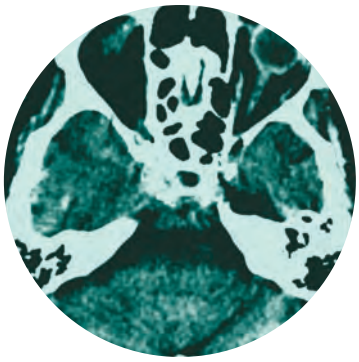

MILD TRAUMATIC BRAIN INJURY (CONCUSSION) ONCE DISCHARGED HOME

The goal of this brochure is to inform and increase awareness of the application of neuropsychological services for Mild Traumatic Brain Injury.

Neuropsychology is the profession that treats patients having suffered some injury to their brain with a corresponding change in thinking abilities and personality. Furthermore, neuropsychology is the relationship between the brain and its functional expression through our daily behaviors.

The neuropsychologist examines the brain by administering a neuropsychological examination (NPE), an assembly of many tests specifically designed to evaluate thinking abilities and behavior (our type of MRI). The purpose of the NPE is to evaluate each patient's brain rather than each patient's complaints.

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Overview

Concussion or mild traumatic brain injury (mTBI) can produce a wide range of physical, cognitive (thinking), and behavioral-emotional problems. Initially, physical problems may be prominent, especially after a moderate-to-severe TBI. Cognitive, behavioral, and emotional impairments, however, have the greatest impact on long-term outcomes. Once discharged, patients who have suffered a concussion should be followed by a neuropsychologist for potential problems in thinking and emotional difficulties, plus helping make practical decisions about their care and capacity to function independently at work or school.

Brief Description of mTBI

A mTBI happens when the head is struck or moved violently, resulting in an alteration of consciousness. The alteration of consciousness usually, but not always, involves some brief loss of consciousness. The patient may be hospitalized for a relatively brief period of time (usually a few days, but often not at all) and discharged home.

The trauma itself may involve a fall, blow to the head, or most commonly the head striking a stationary object, as in a motor vehicle accident. mTBI may also occur after a severe whiplash injury, even if the head is not struck, especially if the whiplash involves some rotation of the head.

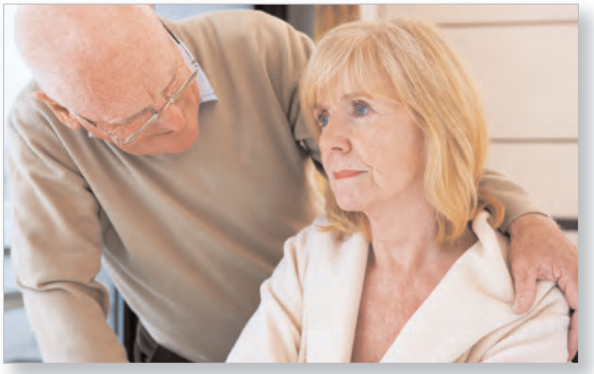
What to Look For

a. Physical/Cognitive

You may experience a number of changes reflective of injury to your brain, including:

headache	**disorientation**	**thinking changes**
nausea	**amnesia**	**noise sensitivity**
dizziness	**agitation**	**light sensitivity**
confusion	**fatigue**	**impaired sleep**

Generally these changes will improve over time. However, it is not uncommon for some of these symptoms to persist for some time, even weeks or months (especially fatigue, following physical or mental effort).



b. Neuropsychological

You will be discharged home with a set of follow-up instructions and gradually resume your routine. You are reassured that "everything will be fine," that recovery will be "complete," and your symptoms will disappear.

This is because, from a physical point of view, you have made a "good recovery" by the time you return home. You are able to walk and talk, dress and feed yourself, and show no obvious neurologic problems. In such cases, you may be unprepared for the difficulties you will encounter, and may have been misled into a set of expectations that can exacerbate your problems.

In a significant number of cases, return to prior levels of functioning is incomplete, and the extent of disability can be quite severe. This is particularly true if the nature of your work is such that it requires proficiency in speed, complex attention, learning, memory, and complex thinking that are most often impaired after mTBI.

Depending on the nature of the injury, there are a number of **reactions** that can arise which you need to understand.

1. **Fear of "going crazy," failure, and depression:**
   This is probably the most common of the situations following mTBI. It results from the expectation that your recovery is complete, versus the reality of adjusting to your environment. Depression follows quickly, especially if a sense of meaning in life is lost.

   The inability to perform in ways you expected versus the problems you are experiencing can lead to a fear that you are "going crazy." This is often reported by patients when they do not have a practical understanding of the normal recovery phase that follows discharge home and the adjustment strategies that need to be applied.

2. **Conditioned anxiety:**
   The prominent feature of this reactive situation is anxiety about the nature of your performance, decision-making, and choices. It comes from the experience of being suddenly and unexpectedly "off" in ways that lead to performance that is experienced as inadequate. This often arises when you experience changes in your thinking in the form of memory, slowness in the speed in which you think, attention/concentration, distractibility, and disorganization.

3. **Denial and lack of awareness:**
   This reactive situation is less common than most. Some patients have an inability to recognize the limitations and changes that have resulted from their accident.

4. **Psychiatric imbalance:**
   This reactive situation is the most serious of the four. This situation implies an imbalance that distorts the patient's sense of reality. Episodes of psychotic proportion can result, often characterized by periods of excitement and states where one's sense of identity is lost. Such scenarios require psychiatric attention.

SPECIAL CONSIDERATIONS TO BE ADDRESSED

1. When discharged from the hospital you should follow up with the trauma team and other medical specialties who participated in your care.

2. Follow up with a neuropsychologist. This will be important because cognitive and neurobehavioral deficits are the **most common** residual impairments in the postacute period, and contribute to long-term difficulties.

NEUROPSYCHOLOGICAL CARE INVOLVES THE FOLLOWING:

Assessment: The first step in the treatment of mTBI is identification of the problems. It is very important for you to understand the nature of your problem and what to do about it.

This may involve the administration of a neuropsychological examination (NPE), which is an assembly of tests specifically designed to identify thinking problems. This is administered by a competent clinical neuropsychologist. The neuropsychologist is a psychologist with special training in brain-behavior relationships, who specializes in the evaluation and treatment of brain injury.

Education: Next, the most effective intervention for mTBI is early education and information for you and your family. The best time to start this was when you were in the ER or hospital. Patients who know what may happen understand what to do and are less likely to develop one of the aforementioned reactive situations. Prior to discharge you will be given a set of instructions by your trauma team.

Utility and Value of an NPE

1. Documentation of cognitive, behavioral, and emotional functioning for you and family members.
2. Feedback to improve awareness of deficits.
3. Documentation of information that serves as a "blueprint" for your neuropsychological rehabilitation. A treatment plan utilizes different methods, such as:
   - **medical adjustment counseling**
   - **behavioral intervention**
   - **cognitive remediation**
   - **stress management**
   - **family systems therapy**

Collectively, this will determine your ability to function independently with regard to thinking, driving capacity, and timeliness of return to work or school.

The successful adaptation to mTBI is ultimately a recovery process captured in the concept of accommodation. This is the process where you recognize, accept, and adjust to a new set of possible limitations that may arise as a result of mTBI. However, most people improve with no ongoing complaints.