What is traumatic brain injury?
TBI is an injury to the brain caused by a blow or jolt to the head from blunt or penetrating trauma. The injury that occurs at the moment of impact is known as the primary injury. Primary injuries can involve a specific lobe of the brain or the entire brain. Sometimes the skull may be fractured, but not always. Immediately after the accident the person may be confused, not remember what happened, have blurry vision and dizziness, or lose consciousness.

What are the symptoms?
Depending on the type and location of the injury, the person’s symptoms may include:

- Loss of consciousness
- Confusion and disorientation
- Memory loss/amnesia
- Fatigue
- Headaches
- Visual problems
- Poor attention/concentration
- Sleep disturbances
- Dizziness/loss of balance
- Irritability/emotional disturbances
- Feelings of depression
- Seizures
- Vomiting

What is the treatment?
Patients with a Mild TBI usually do not require surgery. They generally need rest and at times medications to help relieve headaches.

What is the recovery for a mild TBI?
After a mild brain injury patients can have a wide variety of symptoms. Some patients may not experience any symptoms, while others can have severe symptoms such as headaches, dizziness, memory problems, sleep disorders, fatigue, emotions, or seizures. A description of the common problems people experience after a mild brain injury are below:

**Headaches**
Headaches are a very common problem after a mild TBI. Most patients with a mild TBI will experience headaches. Over the counter acetaminophen is the best medication to treat your headaches. In most patients, headaches will go away within 1-2 weeks and they should gradually improve with time. If your headache would worsen or become severe and unrelieved by pain medication then call your health care provider.

**Dizziness**
Dizziness is another very common symptom. The dizziness should improve with time, however if it becomes severe and makes it difficult to complete tasks please contact your health care provider to discuss options for treating these symptoms.

**Memory problems**
Memory problems are common among patients with a mild TBI. This can range from problems with organizing tasks to problems remembering names or the grocery list. This is called your short-term memory. Generally these memory problems are mild and will resolve over time, however some patients may need to get help from a speech therapist. A speech therapist can help with ways to organize and provide tips to practice improving your short-term memory.

**Sleep disorders/Fatigue**
Patients with a mild TBI can also have problems with sleep and fatigue. Initially, after head injury patients will feel tired, need frequent rest periods and may want to sleep most of the time for the first several days. It is important to increase your activity level gradually every day. Increasing your activity to include light exercise will help your symptoms improve more quickly. When going back to work it is important to take this into account. You might need to work part-time for the first week to build up your endurance before going back full-time. Like all other symptoms with a mild TBI this will diminish with time.

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Emotions
After a mild TBI some patients have trouble controlling their emotions. This means they might get mad or angry in a situation where they normally wouldn’t or some patients say they cry easily, even at a sad commercial on TV. This can be a huge adjustment and can cause strain on relationships. Caregivers or spouses may be more likely to notice these subtle changes in the patient’s personality. Contacting the patient’s physician to get a neuropsychological evaluation may identify specific cognitive and behavioral areas that were weakened or changed by the TBI and help provide direction for further care.

Seizures
Seizures can occur anytime the brain is injured. Patients with a mild TBI are often not given seizure medications because they have a low risk of having a seizure. However, at the discretion of the medical team some patients may be treated with medication to prevent seizures from occurring for a short period of time after the injury.

How can I prevent a mild TBI?
Tips to reduce the risk for a head injury:

- Always wear your helmet when riding a bicycle, motorcycle, skateboard, or all-terrain vehicle.
- Never drive under the influence of alcohol or drugs.
- Always wear your seat belt and ensure that children are secured in the appropriate child safety seats.
- Avoid falls in the home by keeping unsecured items off the floor, installing safety features such as non-slip mats in the bathtub, handrails on stairways, and keeping items off of stairs.
- Avoid falls by participating in an exercise program to increase strength, balance, and coordination.
- Store firearms in a locked cabinet with bullets in a separate location.
- Wear protective headgear while playing sports.

When should I return to the emergency room?
After a patient is discharged home they will need constant supervision for the next 24-48 hours from a loved one to watch for changes.

- If the patient notices an increase in sleepiness
- If the patient is unable to be awoken from sleep
- If the patient has new onset nausea and vomiting or nausea and vomiting that is unable to be controlled with medication

Resources:
- The Brain Injury Association:
  www.biaoh.org
  www.biausa.org

If you have questions, concerns or would like to schedule a follow-up appointment to discuss your symptoms, please call the Neurotrauma Hotline.
(513) 584-2804

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Reviewed by: Erin Silva, CNP; Norberto Andaluz, MD
This information is not intended as a substitute for professional medical care. Always follow your healthcare professional’s instructions.
You have been diagnosed with a concussion also know as a mild traumatic brain injury.

Normal symptoms in the first few weeks following an injury are:

<table>
<thead>
<tr>
<th>Physical</th>
<th>Thinking</th>
<th>Emotional</th>
<th>Sleep</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headaches</td>
<td>Sensitivity to light</td>
<td>Feeling mentally foggy</td>
<td>Irritability</td>
</tr>
<tr>
<td>Nausea</td>
<td>Sensitivity to noise</td>
<td>Problems concentrating</td>
<td>Sadness</td>
</tr>
<tr>
<td>Fatigue</td>
<td>Numbness/tingling</td>
<td>Problems remembering</td>
<td>Feeling more emotional</td>
</tr>
<tr>
<td>Vomiting</td>
<td>Visual problems</td>
<td>Thinking slower</td>
<td>Nervousness</td>
</tr>
<tr>
<td>Dizziness</td>
<td>Balance problems</td>
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</tbody>
</table>

Normal symptoms in the first few weeks following an injury are:

Call your doctor or go to the emergency room if you experience any of the following symptoms:

| Headaches worsen & unrelieved by medications | Feel very drowsy | Can’t recognize people or places | Unusual behavior change |
| Seizures | Repeated vomiting | Increasing confusion | Increasing irritability |
| New Neck pain | New Slurred speech | Weakness or numbness in arms or legs | Loss of consciousness |

Returning to Daily Activities

1. Get plenty of rest. Keep the same bedtime on weekdays as well as weekends.
2. Take daytime naps or rest breaks when you feel tired.
3. Limit physical activity as well as activities that require a high level of thinking or concentration. These activities can make symptoms worse.
4. Drink plenty of fluids and eat carbohydrates or protein to maintain appropriate blood sugar levels.
5. As symptoms decrease, you may begin to gradually return to your daily activities. If symptoms worsen or return, lessen you activities and try again in a few days. Concussion symptoms can take up to 3 months to completely resolve.
6. During recovery, it is normal to feel frustrated, sad, and emotional. Be patient and allow yourself to rest when needed.

Please call the Neurotrauma Hotline with questions regarding your recovery.

513-584-2804