Understanding Concussions

What is a concussion?

A concussion is a brain injury that interferes with normal brain function, leading to temporary cognitive and physical deficits. Concussions are functional brain injuries, not structural injuries. This means a microscopic injury occurs within the neurons of the brain, leading to impairment of how the brain operates. Although concussions do not cause structural damage to the brain, they need to be taken seriously. Improper management can lead to permanent functional deficits and, in rare cases, death.

How does a concussion occur?

Concussions typically occur as a result of the head's sudden change in direction or speed. The brain, inside the head, continues to move along its original path, while the rest of the head does not. The result is stretching of neurons and other microscopic damage throughout the brain. As it attempts to heal itself, the brain requires more resources to function than the body can provide. This can lead to multiple symptoms.

INITIAL SYMPTOMS

- Headache
- Confused/dazed
- Combative/overly aggressive
- Glassy-eyed
- Repetitive questions
- Restless/irritable
- Blurred vision

LONGER-LASTING SYMPTOMS

- Headache
- Feeling slowed down/fatigued
- Difficulty concentrating/fogginess
- Dizziness
- Light/noise sensitivity
- Memory problems
- Emotional issues

How is a concussion treated?

A concussion is an injury that, if treated properly, will heal on its own. Caring for a concussion is centered on creating the best environment possible to allow the brain to rest and recover. This may require adjustments and restrictions for daily activities. Every concussion is unique; therefore, care needs to be personalized.

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Recommendations

Limit mental exertion

Activities that require focus and concentration like school, homework or reading can cause an increase in symptoms. The following accommodations are often recommended:

- Initially, students may need to stay home from school
- Return to school should start with quarter-days to half-days when symptoms permit
- When returning to school, consider alternating classes to avoid getting too far behind
- Work with the school for individualized accommodations from teachers to eliminate nonessential homework/projects and allow extra time for make-up assignments
- Avoid loud areas like music/band classes, lunchrooms, shop class and hallways in between classes
- Some classes/subjects can be more challenging to work back into than others. Special arrangements may need to be considered for specific subjects.

Limit visual stimulation

Large amounts of visual stimulation require more energy usage from the brain and, in turn, typically increase symptoms. This includes television and computer usage, as well as activities such as texting, video games and reading. All of these activities should be avoided until the individual is cleared by a physician. Activities should be gradually reintroduced only when symptom-free or when symptoms are manageable. Leisure activities (video games, Facebook, etc.) should only be re-established once students are able to tolerate full academic activity.

Avoid physical activity

All physical activity can potentially lead to prolonged symptoms. All contact sports and unnecessary physical activity should be avoided until completely symptom-free and cleared by a physician. If a second injury to the brain occurs before the first has healed, **Second Impact Syndrome** can occur. This can lead to permanent brain injury and even death. Attending sports practices and games can cause an increase in symptoms due to the amount of audio, visual and emotional stimulation.

Sleep

Rest and sleep are some of the most important ways to help a concussion heal. Concussed individuals are often fatigued and typically go to bed earlier and sleep later than normal. Individuals should stick to a consistent bedtime schedule in a dark, quiet room with no electronics in the bedroom. Allow for 30 minutes of “down time” before bed to avoid difficulty falling asleep. Napping throughout the day can be beneficial, but refrain from naps that are longer than 20-30 minutes to avoid throwing off nightly sleep patterns.

Pain control

A headache is the most common symptom of a concussion. Most headaches are treated with over-the-counter (OTC) medications. Initially, Tylenol is preferred over other medications. If OTC medications are not providing adequate relief, contact your physician.

Returning to sports and other activities

A specific return-to-play protocol will be provided by the physician once concussion symptoms have resolved. This protocol involves a gradual progression back into physical activity to ensure that symptoms do not return when attempting activity. Once symptom-free, follow up with your physician before attempting exercise.

Concussed individuals need to be cleared by a physician before returning to sports and physical activity. It is normal for an athlete to be upset about missing a game or event. There is serious risk in returning to physical activity too soon. By returning too quickly, individuals may experience prolonged symptoms, permanent injury and even death.

To make an appointment with the Froedtert & the Medical College of Wisconsin Concussion Management Program, call **414-805-5005**.