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## Updating Concussion Protocol Information Pamphlet

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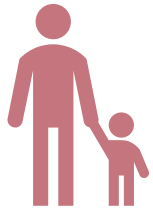


# UPDATING CONCUSSION PROTOCOL INFORMATION MAD RIVER FAMILY MEDICINE

SUSAN CAMPBELL    FEBRUARY 2020    MENTOR: DR. JOHN WILSON



# PROBLEM IDENTIFICATION



**7% of children aged 3-17 have had a significant head injury reported by parents or guardians<sup>1</sup>**

18.7% of these children have had more than one head injury

Non-Hispanic white children are almost two times more likely to have a concussion than non-Hispanic black or non-Hispanic children



**Failure to adhere to restrictions in the post-concussion period can lead to complications**

Second Impact Syndrome  
Prolonged Post-concussion Syndrome  
Sleep Disturbances



**Awareness of Warning Symptoms**

When to seek additional care

<sup>1</sup> Black, Lindsey I., et al.(2018). *Parental Report of Significant Head Injuries in Children Aged 3–17 Years: United States, 2016*. NCHS Data Brief No. 302.

# **PUBLIC HEALTH COST OF TRAUMATIC BRAIN INJURIES**

- Estimated 1.1 – 1.9 million pediatric sports and recreational related concussion occur each year. <sup>1</sup>
- Pediatric health care utilization annually for TBIs: 377,978 outpatient visits, 166,929 ED visits, and 4,936 hospitalizations. <sup>1</sup>
- “In 2013, a total of approximately 2.8 million TBI-related ED visits, hospitalizations, and deaths (TBI-EDHDs) occurred in the United States.”<sup>2</sup>

<sup>1</sup> Bryan MA, Rowhani-Rahbar A, Comstock RD, Rivara F; Seattle Sports Concussion Research Collaborative. Sports- and Recreation-Related Concussions in US Youth. *Pediatrics*. 2016; 138(1).

<sup>2</sup> Taylor CA, Bell JM, Breiding MJ, Xu L. Traumatic Brain Injury-Related Emergency Department Visits, Hospitalizations, and Deaths - United States, 2007 and 2013. *MMWR Surveill Summ*. 2017;66(9):1-16. Published 2017 Mar 17.

## COMMUNITY PERSPECTIVE



Jessica Kamerer – Mother of three sons that attend school in the Mad River Valley. Stated that she would find a patient handout on concussions useful. Specifically stated that most homework is computerized, so recommendations on computer and screen-time usage would be helpful.



John Wilson – volunteer ski patroller at Mad River Glen Ski Area. Stated that it would be useful to have a simple handout to give to skier with suspected head injuries detailing what to expect in the first 48 hours after a concussion. Many skiers come up for the weekend from out-of-state, so being able to provide guidelines on when to seek care and what to watch for at home would be helpful.

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# INTERVENTION AND METHODOLOGY

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- Create a handout with language directed towards the patient population
    - Basic information about concussions
    - Warning signs vs common symptoms
    - Return to activities recommendations

# RESPONSE

## Concussion Advice

### What is a concussion?

A concussion is a mild injury to your brain. This commonly occurs after a fall, bump, or blow to the head which causes the brain to move back and forth in your skull. After the event, it is common to experience many different symptoms which are listed below. In some cases, you could experience symptoms that would be worrisome and require you to come back to the doctor; these are also listed below.

### Worrisome Symptoms (Call the office or go to the Emergency Room)

For 24 hours after your head injury, it is recommended that you stay with someone who can monitor you for more serious symptoms such as:

- Repeated vomiting
- Loss of Consciousness or inability to awaken from sleep
- Trouble with walking or balance
- Worsening headache
- Seizures (jerking of limbs)
- New or worsening difficulty with vision
- Weakness or numbness anywhere on your body
- Increasing confusion, restlessness, or agitation

### Common Symptoms

- Headaches
- Trouble concentrating
- Feeling slow or “foggy”
- Nausea and vomiting
- Light and sound sensitivity
- Lack of energy
- Trouble sleeping
- Sleeping more or less than usual
- Feeling emotional or irritable

### Why didn't my doctor do any tests?

Concussions are diagnosed by the symptoms that you presented with. There is no test that can show a concussion. While there is mild injury to your brain, this will not show up on an Xray, CT scan, or MRI. If you are having warning symptoms, then imaging may be warranted.

### What should I do now?

There is no right answer for how long you should rest before returning to your normal daily routine. Generally, after a mild head injury, it is suggested to rest for 48 hours after the incident. During this time avoid any activities that trigger your symptoms, including but not limited to, school, work, and driving. Returning to activities too soon can make your symptoms last longer.

Jackson WT, Starling AJ. Concussion Evaluation and Management. *Med Clin North Am.* 2019;103(2):251–261.

Mark E. Halstead, et al. Sport-Related Concussion in Children and Adolescents. *Pediatrics* 2018;142; DOI: 10.1542/peds.2018-3074 originally published online November 12, 2018

Old recommendations suggested waking up individuals with concussions every two to three hours. This is no longer recommended if you do not have the warning symptoms mentioned above. Rest as much as possible directly following a concussion.

It is safe to use Tylenol (acetaminophen) for your headache.

### Screen Time

There are no specific recommendations regarding screen time, including television, cellphones, and tablets. However, screen brightness and small font sizes can make your symptoms worse if you are experiencing light sensitivity. If screens are making your symptoms worse, avoid them as much as possible.

### Return to activities

It is important to stop all physical activity for a short time after getting a concussion. Continued activity can make you vulnerable to a second concussion, which may be more serious than the first. You are most at risk for a second concussion in the first 7-10 days.

After the 48 hours of rest mentioned above, you can begin to slowly participate in your normal activities. If you do not experience any symptoms during your activity, you can slowly add more the next day.

If you are a high school athlete, it is recommended that you work with the trainers at your school to slowly work back into your sport safely under their supervision.

### What if I'm not getting better?

Most individuals will improve within three to ten days from the incident. If you follow the above recommendations but continue to have symptoms that are not improving after one month, call for an appointment. Most concussions will resolve given time and rest, but occasionally we may need to refer you to additional resources.

Jackson WT, Starling AJ. Concussion Evaluation and Management. *Med Clin North Am.* 2019;103(2):251–261.

Mark E. Halstead, et al. Sport-Related Concussion in Children and Adolescents. *Pediatrics* 2018;142; DOI: 10.1542/peds.2018-3074 originally published online November 12, 2018



## EVALUATION OF LIMITATIONS

- Resource is intended for patient use, so wording is simplified
- Handout intended for primary care after evaluation and diagnosis with a mild concussion. Not comprehensive of all traumatic brain injuries
- Details are simplified to avoid an overwhelming handout
- Does not discuss all resources available or a complicated post-concussion period
- Handout was only distributed Mad River Valley Family Medicine Office, so the sample size to evaluate effectiveness is small



Create a return to play outline for patients that do not have good access to athletic trainers or physical therapist

Create a skiing specific resource that would be helpful for the ski patrol units located in the Mad River Valley

## **RECOMMENDATIONS FOR ADDITIONAL PROJECTS**

## Sources

Title Picture: John Shlabotnik. "Skiing on Needle's Eye", March 7, 2018.

<https://www.flickr.com/photos/joeshlabotnik/41543441315>

Black, Lindsey I., et al.(2018). *Parental Report of Significant Head Injuries in Children Aged 3–17 Years: United States, 2016*. NCHS Data Brief No. 302.

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