

# Sports Medicine Monthly

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## MANAGEMENT OF CONCUSSION:

### Acute Treatment

Much like any other injury has a treatment or a group of interventions that are immediately put into place, the same is also vital for appropriate management of concussion. With a concussion, correct immediate interventions are just as important; if not more so than many other injuries. Whereas an injury like an improperly treated ankle sprain may cause long term instability, the likelihood of additional injuries, or even possibly arthritis, improper management of concussions has been documented to lead to long-term depression, long-term symptoms, and in very rare instances, neurological diseases.

So what constitutes appropriate immediate care for a concussion?

#### #1. Identify possible life threatening concerns that would require EMS activation

- Loss of Consciousness
- Frequent and/or Forceful Vomiting
- Numbness, Weakness, or Altered Sensation
- Blurred or Altered Vision
- Pupils unequal and not reactive to light
- Any possibility of neck injury



#### #2. Prevent the possibility of further injury

- The safest location possible is always preferred, and more often than naught, the sideline or the bench isn't the safest possible option.

#### #3. Maintain continual supervision of the athlete

- This athlete should never be left alone until you receive a written plan of care from a Team Physician or Certified Athletic Trainer.

## When is an ER visit appropriate?

Many times, Athletic Trainers and Team Physicians are asked by parents or a coach when or if they should take an injured athlete to the local emergency department.

#### For the short answer:

Always err on the side of caution. No physician or certified athletic trainer will ever fault anyone for being concerned about a patient's well-being. It's always better to go get further help and not need it rather than need help and not go.



#### For the long answer:

Provided that the conditions noted in the left-hand column under #1 are not met, other reasons for a concussed athlete to visit their local emergency room would include:

#### #1. Significant, Disabling Symptoms

When a headache begins to influence ability to concentrate or when sensitivity to light begins to cause a headache, these are good indicators that prompt evaluation is needed. Severe symptoms should never be ignored.

#### #2. Any increase in symptoms or any additional symptoms:

Concussion symptoms and severity, especially in the pediatric population, have been documented to increase in severity or even manifest for the first time several hours after the injury episode. These can be signs of a worsening head injury and should not be dismissed.

Should your child or athlete sustain a concussion, you should be provided with a take-home form to help you monitor your child. If needed, the CSOS Concussion Take-Home Form can be found at our website:

<http://www.csosortho.com/concussions.html>



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## What Does it Mean to Rest?

Defining exactly what constitutes rest for the concussed athlete is so much more for our patients than simply just telling them not to play. Much like anything else, the brain only has a finite amount of resources (e.g. energy and nutrition). As such, any additional demand on the resources of the brain through any of the following areas will impede healing and can greatly delay full recovery by removing resources that could have been used.

### **No Increases in Blood Pressure**

As the brain is the most vascularized structure in the body, any increase in blood pressure places additional pressure on the neurological tissues of the brain. This is the same reason why most individuals with headaches note their headache worsens if they exercise. Any activity that increases blood pressure (i.e. video games, watching intense movies or athletic events, etc...) should be avoided.



### **No Increases in External Stimuli**

The brain is the central stimuli processing unit of the body. The more stimuli, the more to process. Intense lights, noises, and/or anything other than a quieter environment will increase or delay the full recovery of a patient's symptoms.

### **No Academic or Critical Thinking Demands**

The brain is the neurological housing center for critical thinking. Academic demands should never begin until a patient has reached asymptomatic status, and, once reached, academic loads should always reflect a daily, stepwise progression from no academia to full load.



### **No Athletic or Exertional Demands**

Athletics is out for two previously mentioned reasons:  
#1. No increases in blood pressure  
#2. Athletics is academics, just with exertion added.

## Over-the-Counter Medications

For many years, Tylenol (i.e. acetaminophen), has been a medication of choice for an over-the-counter option for a patient suffering from a concussion. Primarily because acetaminophen is an analgesic, and not an anti-inflammatory medication like Ibuprofen, Aleve, Advil, or Motrin.



The inflammatory response of the body is vital to tissue healing. As such, the utilization of anti-inflammatory medication would hinder and delay healing. Thus, acetaminophen was the early medication of choice. However, recent years and newer research continues to demonstrate that our patients are reporting increases in symptoms and even the onset of new symptoms several hours after the original episode. For a patient taking a pain medication, increases in symptoms or the presence of newer symptoms could easily be missed under the effect of an analgesic. Therefore, when it comes to whether or not over-the-counter medications should be used for concussion patients, the following guidelines should be adhered to.

- #1. No Anti-Inflammatory Medication**  
e.g. Ibuprofen, Advil, Aleve, Motrin, etc...
- #2. No Medication within the first 48 hours**
- #3. Acetaminophen only if Vital to Rest**

As the number one treatment for a concussion is to rest, acetaminophen can be used when a symptom like a headache is so severe that it prevents a patient from sleeping or resting.

## **A Note to the Reader.....**

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