

Hunterdon Concussion Recovery Plan for Children and Teens

The goal of the Concussion Recovery Plan is to return the injured child or teen to baseline pre-concussion function as soon as possible. Since every concussion is different, symptoms and recovery times may vary. The injured person should always be evaluated by a medical professional after a concussion. Follow up medical assessment will depend upon the findings at the time of the initial evaluation.

Concussion Recovery Stages

1. Cognitive and Physical Rest Phase of Recovery

Immediately after the concussion, a child or teen may have symptoms, such as headache, light and sound sensitivity, dizziness, trouble focusing or remembering, and feeling foggy or slow (see complete symptom list below*). PHYSICAL REST is necessary for 24 to 48 hours. After this time period gradual and progressive return to non-contact, low risk for head injury activities should be encouraged. Safe activities include walking, non-strenuous hiking, non-competitive swimming and using a stationary bike. If symptoms are worsened by light physical activity, wait a day or two and try again. Physical activity should stay at low to low-moderate levels and should not worsen concussion symptoms.

COGNITIVE (thinking) REST is necessary when activities such as reading, video games, computer use, cell phone use and social interactions cause worsening of symptoms. These activities may need to be completely avoided for the first 24 to 48 hours. Light mental activities such as limited amounts of television or computer use can be tried over time. Not attending school for 1 to 2 days after the injury is often necessary, due to inability to do sustained mental activities. Return to school should occur as soon as possible. Most students with concussion can return to school within 5 days of the start of a concussion, the majority within 1 to 2 days.

2. Return to Learn

When a person with concussion can tolerate 30 to 45 minutes of mental activities without significant worsening of concussion symptoms, then returning to school is recommended. During this stage gym and sports are not allowed, but light physical activities which do not worsen concussion symptoms are encouraged. Restrictions on school work and accommodations during the school day may be necessary initially. This may include: limiting homework and test taking, allowing rest periods in the school nurse's office, shortened school day, limiting computer use and avoiding classes that aggravate symptoms such as band and chorus (due to loud noise exposure). A *Concussion Recovery Plan for School* details school restrictions and accommodations and will be completed by your provider. As concussion symptoms improve, restrictions will be removed. Most concussion symptoms resolve in 2 to 3 weeks. Concussion symptoms lasting 4 weeks or longer may require additional treatment by a psychologist or physical therapist.

3. Return to Play

When all academic activities can be performed without causing any concussion symptoms, return to gym class and sports can be considered. For some athletes, baseline imPACT testing (computer testing that assesses cognitive function) may be available and used to help decide whether return to sports is acceptable. A Return to Play evaluation is often administered by a school athletic trainer or physical therapist. This evaluation is a stepwise return to activity involving increasing physical demands while evaluating for return of concussion symptoms during the testing. Once all steps have been completed and passed, then a note for return to gym and sports can be written. An example of a stepwise approach is shown below.

- **Step 1 Light aerobic movements with *no resistance training***
Walking, swimming, stationary cycling for 20 minutes.
(May be completed before starting the protocol with a trainer or physical therapist)
The objective of this step is to increase heart rate. Keep intensity <70% of maximum
- **Step 2 Sport specific exercise such as running or gradual resistance training**
Skating, jogging, running drills. No sprinting. No head impact activity.
The objective of this step is to add movement to increased heart rate
- **Step 3 Non-contact training drills, gradually increasing resistance training, passing drills**
The objective of this step is progression to more complex training
- **Step 4 Full contact training**
Practice in non-competitive environment.
The objective of this step is to restore confidence in the athlete and allow assessment of functional skills by staff
- **Step 5 Return to full play**

***Possible symptoms of concussion** (may not be present immediately after injury and may occur days later).

- Easy distractibility or poor concentration
- Feeling “in a fog”
- Inappropriate behavior
- Seeing stars or flashing lights, vacant stare
- Blurred or double vision
- Dizziness or lightheadedness, loss of balance
- Headache
- Fatigue
- Nausea and vomiting
- Change in coordination
- Slurred speech
- Ringing in the ears
- Irritability
- Low tolerance for frustration
- Personality changes
- Anxiety or nervousness
- Depression
- Forgetfulness/poor memory
- Confusion or difficulty understanding concepts