



# Concussion Education

## What is a concussion?

A concussion is a change in brain function following a force to the head that may (or may not) be accompanied by temporary loss of consciousness.

Examples of such forces include:

- Head to Head
- Head to Ground
- Head to Object (ball, puck, etc.)
- Head to Body

## Home care

- No same day return to play
- Rest - mentally and physically
- The athlete can be allowed to sleep if symptoms do not progressively get worse
- Do not let the athlete drive home
- Do not go home alone
- Do not take any medication that thins the blood (ie. Aspirin, Ibuprofen, Aleve)
- Only Tylenol is OK
- Ice any painful area
- OK to stay home from school 2 - 3 days if symptomatic
- Contact school counselor to inform teachers and Athletic Trainer

## Signs and symptoms

Parents/coaches notice the athlete:

- Appears dazed or stunned
- Is confused about position
- Forgets an instruction
- Is unsure of game, score, etc.
- Moves clumsily
- Answers questions slowly
- Loses consciousness (even briefly)
- Shows behavior or personality changes
- Can't recall events prior to hit or fall
- Can't recall events after hit or fall

Athlete complains of:

- Headache or "pressure" in head
- Nausea or vomiting
- Concentration / memory problems
- Balance problems or dizziness
- Double or blurry vision
- Sensitivity to light
- Sensitivity to noise
- Feeling sluggish, hazy, foggy, or groggy
- Confusion
- Does not "feel right"

## When to go to the Emergency Room

Monitor athlete for 1-3 hours after concussion is sustained for:

- Loss of consciousness
- Deteriorating conscious state
- Increasing confusion or irritability
- Trouble maintaining balance
- New symptoms arise or old ones become worse
- Repeated vomiting

# Services for persons with concussion

## Occupational therapists (OT) help with:

Rosanne Yee, OTR/L

Kyla Laraway, OTR/L

- Vision problems
- Fatigue management and pacing
- Assisting with return to school/work

## Physical therapists (PT) help with:

Jennifer Wilhelm, PT, DPT, NCS

Jeff Schlimgen, PT, MSPT, NCS

Marvin Smith, PT, DPT

Kitty Leelaamornvichet, PT, DPT

Rachel Cohen, PT, DPT

Amy Woods, PT, DPT

- Balance and dizziness
- Coordination
- Pain management
- Assisting with return to sport

## Pediatric physical therapists (PT) help with:

Ashley Mildren, PT, DPT

- Balance and dizziness
- Coordination
- Pain management
- Assisting with return to sport

## Speech and Language Pathologists (SLP) help with:

Kristin Knight, MS, CCC-SLP

Haley Landau, MS, CCC-SLP

- Communication: Finding the right words, organizing your thoughts, etc.
- Memory, attention, speed of information processing, and problem solving
- Assisting with return to school/work

## Athletic Trainers (ATC) help with:

Ryan Rockwood, ATC

Kayla Ward, MS, ATC, CSCS, CES

Lorena Belmonte, MS, ATC, NASM PES

- Return to sport
- ImPACT testing

## Physicians help with:

Jim Chesnutt, MD

Ryan Petering, MD

Rachel Bengtzen, MD

Melissa Novak, DO

Doug McKeag, MD

Sean Robinson, MD

Carol Federiuk, MD

- Concussion evaluation/management
- Final clearance

## Neuropsychology/coping clinic:

Trevor Hall, PsyD

Tyler Duffield, PHD

- Self-Management tools
- Sleep protocols
- Cognitive Rehabilitation
- Neuropsych. testing
- Assisting with return to school/work

**Sports Medicine (503) 494-9992**

**Rehabilitation Services (503) 494-3151**

**Neuropsychology (503) 418-8236**



# OHSU Sports Medicine & Rehabilitation

## Who we are

OHSU Sports Medicine and Rehabilitation is a team of healthcare professionals, including doctors, physical therapists and athletic trainers. Injuries are an unfortunate, but common part of athletics. Our team works together with athletes, coaches, and parents to help athletes manage injuries and return to their sport in a safe manner.

## ImPACT testing

This is a computer-based neurocognitive test designed to evaluate concussions. A concussion is a common, yet mild traumatic brain injury resulting from a force or impact to the head. This is an under diagnosed injury that can potentially lead to serious consequences down the road if not managed properly. This test helps healthcare professionals make better decisions regarding concussion management. We are available to test athletes on an individual basis at OHSU or to administer multiple tests for a team at your school or club.

## Athletic event medical coverage

Often times, we are seen on the sidelines of an athletic event. During these events our role is to facilitate the health and safety of the athletes. Our team of skilled Athletic Trainers are available to provide this coverage to you.

## Contact us

**503-494-9992** to schedule appointments with a sports medicine doctor, injury evaluations by an Athletic Trainer, or inquire about ImPACT testing.

For more information about high school athletic event coverage, please contact Ryan Rockwood **rockwoor@ohsu.edu**

## OHSU Sports Medicine at Gabriel Park

4411 SW Vermont St  
Portland, OR 97219

# ImPACT Testing

## What is it?

The ImPACT test is a computer-based neurocognitive test that is designed to evaluate concussions. This test helps doctors and athletic trainers make decisions about concussion management by testing the following areas:

- Attention
- Memory
- Problem solving
- Reaction time

## How does it work?

Many experts advise athletes involved in sports with a risk of head trauma (i.e. football and soccer) to take a pre-participation baseline test. The results are saved so that if an athlete sustains a head injury, a post-injury test can be taken to compare to the baseline. This allows health care professionals to compare post-injury results to the baseline test for an individual athlete.

## How do I take the test?

ImPACT testing is a service we offer through OHSU Sports Medicine and Rehabilitation. We offer:

- Post concussive exams by ImPACT trained physician (depending on personal insurance)
- Individual baseline testing at our OHSU clinic
- Individual post-injury testing at our OHSU clinic
- Baseline and post-injury clinic tests cost: \$40

## Options for schools and teams

- Schools and teams may purchase the testing software and a certain number of baseline post-injury tests.
- OHSU representatives are available to administer the test (pricing varies).

## Contact us

If any athlete, coach, or parent feels the need to be tested, or is interested in the ImPACT test, please contact OHSU Sports Medicine and Rehabilitation at **503-494-9992**. Please state that you are interested in ImPACT testing and you will be directed appropriately.

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# 'Return to Play' Guidelines for Sports

## Step 1

Rest until asymptomatic (physical and mental rest).

Goal: Recovery.

## Step 2

Light aerobic exercise (stationary cycle, walking, swimming);  
Heart rate < 70% max. Max Heart rate is equal to 220 - Age. No  
resistance training.

Goal: Increased heart rate.

## Step 3

Sport specific training (wind sprints, cutting drills, up-downs,  
bear crawls, push-ups, crunches, etc.).  
ImPACT testing is done now.

Goal: Dynamic movement and cognitive clearance

## Step 4

Non-contact training drills  
(full practice with shells **NO CONTACT**).  
Begin progressive resistance training

Goal: Exercise, coordination, and dual task with  
cognitive load

## Step 5

Full contact training after medical clearance by medical  
provider.

Goal: Increase/restore confidence, coaches can assess  
functional level.

## Step 6

**Return to competition.**

## For all returning athletes

- Athletic Trainer will guide and monitor the athlete through the entire 6 step Return to Play program.
- There should be approximately 24 hours (or longer) for each step and the athlete should return to step 1 if symptoms recur.
- Resistance training should only be added in the later steps (5-7) of program.
- Athletes must return to full school schedule before progressing to Step 3.
- Medical clearance should be given before return to full contact practice: Step 6.

# Return to School Guidelines for Sports Concussions

## Why guidelines?

Often students return to school with subtle cognitive, academic, or behavioral needs following concussion. If these are addressed early on it can alleviate long-term difficulties. Here are guidelines for when a student returns to school after a concussion or mild brain injury.

## Inform school staff

For information about concussion/mild brain injury:  
<http://www.cdc.gov/ncipc/tbi/default.htm>

## Monitor student: Watch for any possible red flags associated with concussion / mild brain injury.

### Cognitive difficulties:

- Trouble paying attention
- Difficulty remaining on task
- Slowed responses and or processing of information
- Difficulty shifting attention from task to task
- Organization challenges
- Reduced academic performance

### Social behavior difficulties

- Impulsive behaviors
- Initiation difficulties (trouble starting things)
- Changes in mood
- Depression
- Defiance
- Fatigue
- Confusion

### Physical difficulties:

- Headaches
- Blurred vision
- Changes in taste or smell

## Provide accommodations

If red flags appear, teachers can provide minimal accommodations on a temporary basis until symptoms subside (usually within 3-4 weeks). Accommodations might include:

- Reduced assignment load
- Increased time to complete assignments or exams
- Use of an organizer to track assignments
- Rest periods during the day
- Directions in both oral and written formats
- Clear expectations
- Large tasks broken into smaller components

If the student continues to have academic difficulty after a month, the student's concerns should be further evaluated by a team and the evaluation process for more formalized support such as a 504 plan or IEP begun.

Communicate with the family.

Additional educational support is available through the Center on Brain Injury Research and Training (CBIRT).

[www.cbirt.org](http://www.cbirt.org)

[nowatzke@uoregon.edu](mailto:nowatzke@uoregon.edu)

(541) 346-0597 to connect to the TBI liaison in your area.