

Willamette University Sports Medicine

Concussion and Head Injury

Policy, Assessment, Management, and Return to Play Guidelines

Revised – 5/2/2022

The following document summarizes those policies, procedures and return-to-play guidelines related to the management of concussions and other head injuries for NCAA Division III student-athletes at Willamette University. The information has been developed in accordance with the Willamette University Athletic Department Mission Statement to provide quality services and assure the well-being of each student-athlete.

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I. PURPOSE

The department of athletics at Willamette University recognizes that concussions and other head injuries pose a significant health risk for those students participating in sports. The sports medicine staff has implemented policies and procedures to assess and identify those student athletes who have suffered a concussion. The sports medicine staff uses neurocognitive testing (ImPACT), along with physical examination, and/or further diagnostic testing, to determine when it is safe for a student-athlete to return to participation. Baseline neurocognitive testing will be completed by ALL first year and transfer student athletes prior to participation in athletics at Willamette University. All football athletes will be required to take the ImPACT test annually.

II. GUIDING PRINCIPLES

- Student athletes who are observed, or who have otherwise reported concussion symptoms, including but not limited to headache, confusion, dizziness, nausea or loss of memory or consciousness, will be assessed and treated through this Willamette University Sports Medicine Concussion Management Protocol. **Any athlete exhibiting signs and symptoms of a concussion shall not return to physical activity or academic activities on the same day of the injury.**
- Student athletes who are suspected to have sustained a concussion will be examined as soon as possible by an athletic trainer using the Willamette University Athletic Training sideline concussion assessment tool. Student athletes with a concussion will be removed from play, monitored, and enter the rest phase of the concussion protocol.
- Student-athletes who have sustained a concussion are referred to the Willamette University Office of Accessible Education Services for academic accommodations and will enter the Return to Learn process.
- Student athletes who present with an altered state of consciousness and are unable to communicate with the athletic trainer or physician will be referred immediately for emergency evaluation of cervical spine, skull fracture, and/or intracranial pathology (vomiting x2, retrograde amnesia > 30 minutes).

III. MANAGEMENT PROTOCOL

- The Willamette University Concussion Management Protocol is to be administered by the Willamette sports medicine staff under the direction of the team physician(s). The plan is to be regularly reviewed by the team physician(s), athletic training staff, Director and providers of the Bishop Wellness Center, Office of Accessible Education Services, and other university staff as appropriate.
- Proposed revisions to Willamette University Concussion Management Plan will be forwarded by the head athletic trainer to the Director of Athletics, Dean of Students, Faculty Athletics Representatives, university legal counsel, risk management and insurance administrators for approval. Once the updated concussion protocol is approved, it will be posted on the sports medicine page of the Willamette University athletics website.
- All student athletes, coaches and sports medicine staff will receive annual training about the risks, reporting, and management of concussions and other head injuries.
- Athletic coaches are prohibited from serving as the primary supervisor for Willamette athletics health care providers (athletic trainers, team physicians). In the event that the supervisor has additional coaching responsibilities, management for athletics health care providers will be

reassigned to a new supervisor, to be approved by the Dean of Campus Life, Director of Human Resources, and/or President.

- Willamette athletics health care providers (athletic trainers, team physicians) have the final authority to remove any such student athlete with a concussion or other suspected head injury from practice, training or competition. In the event a Willamette athletics health care provider is not present, management will be the responsibility of the host athletics health care provider (in an away event) or head coach. Coaches are urged to immediately refer the student-athlete to an athletic trainer or nearest emergency room dependent on the circumstances.
- Willamette athletics health care providers (athletic trainers, team physicians) have the final authority to prevent the return to training, practice or competition of any such athlete with a concussion or other suspected head injury.
- Willamette athletics health care providers (athletic trainers, team physicians) have the final authority to immediately refer any such athlete with a concussion or other suspected head injury to an appropriately qualified physician or health care facility.
- After completion of the Return to Play Protocol, final medical clearance (in order to return to all athletic activities) following concussion or another head injury will be made by the Willamette University team physician. Other appropriate health care professionals, including the Bishop Wellness Center and/or neuropsychology professionals, may also be consulted.

IV. BASELINE ASSESSMENT:

Baseline testing will be completed by ALL first year and transfer student athletes prior to participation in athletics at Willamette University. Baseline testing will include neurocognitive testing via the ImPACT, and Sway Medical balance baseline test (mBESS).

It is important to remember that tests used by Willamette University Sports Medicine:

- are screening devices only, they are not intended for determination or diagnosis
- will be used as one of several factors to make decisions regarding return to play and safety of student athletes
- regardless of test results, a student athlete may be removed from practice or play until such time as the individual can have a neurological or neuropsychological examination to determine extent of injury, if any
- Willamette team physician or designee will have unchallengeable authority to determine management and return-to-play

V. CONCUSSION DEFINITION:

Definition of Concussion: a traumatically induced transient disturbance of brain function that involves a complex pathophysiological process. ⁽¹⁾

In accordance with NCAA guidelines, all student athletes will be required to sign a statement in which they accept the responsibility for reporting their illnesses and injuries to the university sports medicine staff, including signs and symptoms of a concussion. During the review and signing process, the student athletes will be presented with educational material on concussions.

VI. CONCUSSION SIGNS AND SYMPTOMS:

According to the 5th International Conference on Concussion in Sport in 2016, signs and symptoms in the following clinical domains, as well as a detailed concussion history reported during the pre-participation examination, are important factors when evaluating a suspected concussion. ⁽²⁾

Clinical Domains:

- a. Symptoms: somatic (eg, headache), cognitive (eg, feeling like in a fog) and/or emotional symptoms (eg, lability)
- b. Physical signs (eg, LOC, amnesia, neurological deficit)
- c. Balance impairment (eg, gait unsteadiness)
- d. Behavioral changes (eg, irritability)
- e. Cognitive impairment (eg, slowed reaction times)
- f. Sleep disturbance (eg, somnolence, drowsiness)

If any one or more of these components is present, a concussion should be suspected and the following management strategy instituted.

Athletic trainers and athletic training students all need to be aware of the signs and symptoms of concussion to properly recognize and intervene on behalf of the student athlete. All athletic training students will watch a concussion video at the beginning of the school year.

VII. CONCUSSION MANAGEMENT:

It is imperative that concussion management include both physical and cognitive rest for the first 24-72 hours. The majority of injuries will recover spontaneously with most individuals recovering in 10-14 days. It is expected that a student-athlete will proceed progressively through a stepwise Return to Learn and Return to Play strategy. According to the 5th International Conference on Concussion in Sport in 2016, after the initial rest period of 24-72 hours, student athletes can be encouraged to participate in closely monitored, gradual activity staying below their symptom-exacerbation threshold (no increase in symptoms), while continuing to avoid vigorous physical and cognitive exertion. Gradual, symptom-limited physical and cognitive activity has been shown to be safe and may even facilitate recovery. ⁽²⁾ The student athlete should not do any unnecessary mental exertion until their symptom score is in single digits. The student athlete's symptom score will be monitored daily by a certified athletic trainer until they complete the stepwise return to play progression.

Neuropsychological Assessment

Once the student athlete is symptom free, they will take the ImPACT test to determine if they have returned to baseline or normal cognitive function. Both physical and cognitive symptoms must have returned to near baseline before the gradual return to play protocol is initiated. Further consultation with neurological professionals, including neurophysiologist, will be at the discretion of the team physician or qualified medical provider. Additionally, student athletes who demonstrate prolonged recovery should be assessed by the team physician or qualified medical provider to consider additional diagnoses including, but not limited to, post-concussion syndrome, sleep dysfunction, headache disorders, ocular or vestibular dysfunction, and mood disorders.

VIII. WILLAMETTE UNIVERSITY CONCUSSION ASSESSMENT:

On-field and Sideline Assessment of Acute Concussion

When a student athlete shows ANY features of a concussion:

- a. The student athlete should be immediately evaluated onsite using standard emergency procedures with particular attention given to excluding a cervical spine injury.

- b. If an appropriate healthcare provider is not present, the athlete should be safely removed from activity and urgent summons of a certified athletic trainer or referral to a medical facility made.
- c. Once emergency management issues are addressed, a concussion assessment will be performed.
- d. The athlete should not be left alone following the injury, written instructions and monitoring for deterioration should be made over the subsequent few hours following injury.
- e. A player diagnosed with a concussion will not be allowed to return to play on the day of the injury, and must complete the return to play protocol.

IX. RETURN TO LEARN GUIDELINES:

The following guidelines for academic participation are suggested:

1. The student-athlete should not return to any academic activities on the same day they sustain a concussion.
2. A representative from the Accessible Education Services office, in collaboration with the student-athlete and the supervising certified athletic trainer, shall communicate to the student-athlete's professors that attending class while suffering from concussion symptoms is likely to be detrimental not only to their recovery but also to their academic performance.
3. Mental rest will be recommended for each concussed student-athlete. This may include missing classes, deferring reading assignments and homework, and rescheduling tests.
4. When returning to class, the student-athlete will work with Accessible Education Services to communicate academic accommodations to professors and/or instructors, and formulate a plan for class work missed, when appropriate.
5. Use of electronic devices should be limited to brief time periods that do not increase symptoms. Efforts should be made to avoid activities that increase or create new symptoms.
6. It is important to remember that the Return to Learn process is **individualized** to each student athlete.
7. If the student athlete experiences an increase of concussive symptoms at any time during the Return to Learn process, they should be moved back to the previous stage.

Return to Learn Protocol

Steps	Progression	Description
1.	Home- Total Rest	<ul style="list-style-type: none"> • No attendance of classes • Set up an appointment with Accessible Educational Services • No Studying or other mental exertion • No screen use (computers, phone, video games, etc.) • Stay at home (except for daily meeting with ATCs and/or AES) • No driving
2.	Home-Light Mental Activity	<ul style="list-style-type: none"> • Begin short periods of studying (example: 10-15 minutes of studying, followed by a 5-10 minute break) • Gradually increase mental exertion time as tolerated • Studying may continue as long as symptoms do not return or worsen • Stay at home (except for daily meeting with ATCs and/or Accessible Education Services) • No driving
3	School-Part time Maximal-Moderate Accommodations	<ul style="list-style-type: none"> • When symptom score is in single digits and student-athlete can tolerate up to 60 minutes of mental exertion without a break, return to 1-2 classes per day • Limit time looking at screens if needed, receive notes from classmates • Provide additional time/accommodations for testing, assignments, and homework

		<ul style="list-style-type: none"> • Athlete is instructed to leave class upon increase of symptoms or return of symptoms
4.	School-Full Time Minimal Accommodations	<ul style="list-style-type: none"> • Attend all classes/labs • May still need additional time for testing and homework • May need some accommodations as student-athlete catches up on previously missed assignments/testing • Athlete is instructed to leave class upon increase of symptoms or return of symptoms
5.	School-Full Time Full Academics and No Accommodations	<ul style="list-style-type: none"> • Student-athlete attends all classes at scheduled times • Able to participate in all classroom activities and testing in same time frame as other students • Complete all homework on time

** WU return to learn policy is adapted from Brain Injury Association of Vermont and TCU's Return to Learn Protocol.

X. RETURN TO PLAY GUIDELINES:

A stepwise return to play protocol is outlined below:

1. The athlete may proceed to the next level if asymptomatic at the current level and scores near baseline or near normal on ImPACT testing.
2. Signs & symptoms, balance and neurocognitive testing in conjunction with the team physician consultation and additional diagnostic tests (as needed) shall determine when a student-athlete will return to full practice/competition.
3. The athlete will not be cleared for full return to play until the "Return to Learn" portion of this protocol is accomplished
4. Continued post-concussive symptoms, prior concussion history and any diagnostic testing results along with neurocognitive testing and physical exam, will be utilized by the sports medicine team in establishing a timeline for an athletes return to activity.
5. It is important to note that this timeline could last over a period of days to weeks or months, or potential medical disqualification from Willamette University athletics. All cases will be handled on a case-by-case basis.
6. The decision by the team physician or designee for all cases of an athletes return to activity is final.

Functional Return to Play Protocol:

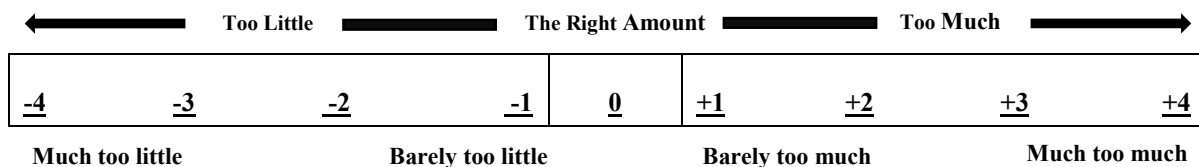
- The athlete may begin step 1 within 24-72 hours post-injury
- Step 2 of the Return to Play Protocol can be initiated when the athlete has been symptom-free for at least 24 hours.
- A 24-hour period between steps is the minimum time frame.
- If any post-concussion symptoms occur while in the stepwise program, the athlete will drop back to the previous asymptomatic level and progress again after a new 24-hour period of rest.

Return to Play Protocol

Steps	Progression	Description
1.	Home- Total Rest/Submaximal Exercise	<ul style="list-style-type: none"> No physical activity for first 24-72 hours After 24-72 hours, SA's can begin gradual, symptom-limited activity, (low intensity bike, short walk, ADL's)⁽²⁾ No screen use (computers, phone, video games, tv/movies, etc.) Stay at home (except for daily meeting with ATCs and/or AES) Goal: Gradual reintroduction of school work activities Needs to be 24 Hours symptom free before moving to next step
2.	Light Exercise	<ul style="list-style-type: none"> Must have remained asymptomatic to progress in protocol Complete the Tour de Bearcat (Page 11), Or 10 minutes of continuous jogging No resistance training Goal: Increase heart rate and remain under symptom threshold
3.	Sport Specific Skills Non-Contact Exercise	<ul style="list-style-type: none"> Must remain asymptomatic for 24 hours after bike test Complete the ImPACT test. Results must return to baseline scores for those with a baseline, or within the norms for specific age group Running, practice warm up No head impact activities Goal: Adding more dynamic movement and individual specific sport skills, must remain under symptom threshold
4.	Non- Contact Training Practice	<ul style="list-style-type: none"> Must remain asymptomatic Harder training drills, agility Can begin resistance training Goal: Exercise, coordination and increased thinking, working back into non-contact team drills
5.	Unrestricted Training	<ul style="list-style-type: none"> Must remain asymptomatic Participate in normal training activities Goal: Restore confidence and assess functional skills by coaching staff
6.	Return to Full Activity	<ul style="list-style-type: none"> Must remain asymptomatic Return to normal game play

After each phase of functional testing, the presence of post-concussive symptoms should be assessed and progression to the next phase of functional testing will require the absence of post-concussive symptoms. The **athlete may not return to full activity until 4 days** after normalization.

Too Little/Too Much Scale



- The premise of the Too Little/Too Much Scale is that performance problems arise when managers either do too little or do too much of something⁽³⁾

This scale can be used as a visual aid to help the student athlete recognize that doing “too much” or “too little” can be a setback during their concussion recovery for both Return to Learn and Return to Play.

XI. MODIFYING FACTORS:

Several modifying factors exist that may influence the management of concussion and even predict the potential for prolonged or persistent symptoms. In these cases, there may be additional management considerations beyond the return to play protocol above. The items in the list below are common concussion modifiers, but are not the only ones.

- a. number, duration (>14 days), and severity of symptoms
- b. prolonged LOC (>1 minute) or amnesia
- c. convulsions
- d. repeated concussions over time, injuries close together in time, “recency” of previous concussion
- e. repeated concussions occurring with progressively less impact force or slower recovery after each successive concussion
- f. age under 18 y/o
- g. migraine, depression or other mental health disorders, ADHD, LD, and sleep disorders
- h. psychoactive drugs or anticoagulants
- i. dangerous style of play
- j. high-risk activity, contact and collision sport, and/or high sporting level

Along with the above guidelines, each case is treated on an individual basis to determine the safest return to activity as possible.

XII. SWAY MEDICAL BALANCE TESTING

All student-athletes are required to have a balance baseline evaluation for pre-participation under NCAA guidelines.

Athlete downloads Sway Medical App onto their phone.

Athlete is given a code to take the mBess baseline test.

Contact and password information will be inputted into the app by the athlete.

Baseline Balance Testing

Administering the Baseline Balance Testing:

- Each trial is 15 seconds
- Hold your phone close to your chest
- Eyes closed
- Test
 1. Double leg stance- Feet are flat and close together
 2. Tandem Stance- Athlete stands with one foot in front of the other. Will switch feet placement for the next test.
 3. Single Leg Stance- Athlete stands on one leg with the other leg held at 20 degrees of hip flexion and 45 degrees of knee flexion. Will switch feet for the next test.

XIII. Post Concussion Symptom Scale

Name _____

Date of Concussion _____

<u>Rating Scale</u>						
None				Moderate		Severe
0	1	2	3	4	5	6

Symptoms	Initial	24 Hrs	Day 2	Day 3	Day 4	Days 5	Days 6	Days 7
Headache								
“Pressure in the Head”								
Vomiting or Nausea								
Balance Problems								
Dizziness								
Fatigue or low energy								
Trouble falling asleep								
Neck pain								
“Don’t feel right”								
Drowsiness								
Sensitivity to light								
Sensitivity to noise								
Irritability								
Sadness								
Nervous or Anxious								
Feeling more emotional								
Confusion								
Feeling slowed down								
Feeling like in a “fog”								
Difficulty concentrating								
Difficulty remembering								
Blurred vision								
Total Score								

Willamette University Sports Medicine
Sideline Concussion Assessment Tool

Name: _____ Date Injured: _____

Sport: _____ Date Reported: _____

History:

Any LOC? ☐ Yes ☐ No If yes, how long? _____

Orientation: (One point each correct answer)

- Current Month: Y / N Date: Y / N Day of week: Y / N Year: Y / N Time (within 1 hour): Y / N
- What venue are we at today? Y / N Which half is it now? Y / N Who scored last? Y / N
What team did you play last week/game? Y / N Did your team win the last game? Y / N

Orientation Total _____/5

Immediate Memory: (one point each, over three trials)

<u>Words</u>	<u>Trial 1</u>	<u>Trial 2</u>	<u>Trial 3</u>
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List 1

Bottle

Newspaper

Song

Cat

Window

Total: _____/5 _____/5 _____/5

Alternate Words

List 2

Elbow

Apple

Carpet

Saddle

Bubble

List 3

Baby

Sunset

Penny

Blanket

Insect

Immediate Memory Total _____/15

Concentration: (one point each correct sequence)

Digits Backwards

4-9-3 3-8-1-4 6-2-9-7-1 7-1-8-4-6-2

5-2-6 1-7-9-5 4-8-5-2-7 8-3-1-9-6-4

Months in Reverse Order

Dec-Nov-Oct-Sept-Aug-July-June-May-Apr-Mar-Feb-Jan

Concentration Total _____/5

Cranial Nerve Testing:

Smell	+ / -	Biting down	+ / -	Eye tracking and pupil reactivity	+ / -
Swallowing	+ / -	Facial Expressions	+ / -	Protrusion of the tongue	+ / -
Facial sensation	+ / -	Shoulder shrugs	+ / -		

Strength Testing:

Grip strength + / - Biceps flexion + / -

Coordination Testing:

Finger-to-nose + / - Tandem walking + / - Romberg Test + / -

Concerns with above testing:

Delayed Recall:

List 1

Delayed Recall Total _____/5

Overall SAC score: _____/30

ATC: _____

Willamette University Sports Medicine

Concussion Care Sheet

As the person who has agreed to care for the athlete once they have left the Treatment Center, the purpose of this fact sheet is to alert you to the symptoms of a concussion, what to watch for and what to do if action is necessary.

Common Signs and Symptoms of a concussion:

- Amnesia
- Confusion
- Headache
- Dizziness or Balance Problems
- Double or Fuzzy Vision
- Nausea
- Light or Noise Sensitivity
- Feeling Sluggish, Foggy or Groggy
- Concentration or Memory Problems
- Slowed Reaction Time

WATCH FOR ANY OF THE FOLLOWING PROBLEMS

- Increase or worsening of the signs/symptoms listed above
- Severe Stiffening of the Neck
- Slurred Speech
- Bleeding or Clear Fluid coming from the Ears or Nose
- Weakness in the Arms or Legs
- Behavior that seems Unusual or Confused
- Unequal Pupils
- Ringing in the Ears
- Unable to be awakened
- Decreased level of Consciousness
- Mental Confusion
- Convulsions
- Vomiting x2

If any of these problems develop, call 911 and take athlete to the emergency room. Once the athlete is in medical care, notify the athletic trainer.

Athletic Trainer: _____

Phone: _____

Training Room: 503-370-6672

***Emergency Department at Salem Hospital: 890 Oak St. SE, Salem, OR 97301**

Other Instructions to Follow:

It is OK to:

- Rest – Quiet, Comfortable, Dim Room
- Use ice (15 minutes) for neck pain
- Go to sleep at a decent hour
- Stay hydrated and eat foods that sound appetizing
- Take Tylenol (Acetaminophen) to lessen a minor headache. (Do not take before coming to report your symptoms)
- Call if symptoms worsen

It is NOT OK to:

- Take sleeping pills, prescription medication, Aspirin, or NSAIDs (Ibuprofen, Naproxen, Advil)
- Drink alcohol or caffeine
- Do any physical or strenuous activity
- Drive a vehicle
- Stay up late or be around large groups
- Watch TV, play video games, be on your computer or phone, listen to loud music

Report to the Athletic Training Room tomorrow for a follow up evaluation. If we will not be in the training room tomorrow, we will call you for a follow up.

***If you are a visiting athlete, check in with your athletic trainer once you arrive home, or with the athletic trainer at the next school you are traveling to.**

‘TOUR DE BEARCAT’

- **2 MINUTE WARM UP**
 - **10 SEC SPRINT**
 - **10 SEC JOG**
 - **15 SEC SPRINT**
 - **15 SEC JOG**
 - **20 SEC SPRINT**
 - **20 SEC JOG**
 - **25 SEC SPRINT**
 - **25 SEC JOG**
 - **30 SEC SPRINT**
 - **30 SEC JOG**
 - **35 SEC SPRINT**
 - **30 SEC JOG**
 - **40 SEC SPRINT**
 - **30 SEC JOG**
 - **45 SEC SPRINT**
 - **30 SEC JOG**
 - **50 SEC SPRINT**
 - **30 SEC JOG**
 - **55 SEC SPRINT**
 - **30 SEC JOG**
 - **60 SEC SPRINT**
 - **30 SEC JOG**
 - **60 SEC SPRINT**
 - **30 SEC JOG**
 - **60 SEC SPRINT**
 - **30 SEC JOG**
 - **60 SEC SPRINT**
- **5 MINUTE COOL DOWN**

SOURCES

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3. Reproduced from R.B Kaiser, D.V. Overfield, and R.E. Kaplan, 2010, Leadership Versatility Index