

Northwestern University Intercollegiate Sports Medicine Concussion Management Policy

Preface

This policy is intended to guide patient care. Medical conditions and specific medical situations are often complex and require healthcare providers to make independent judgments. This policy may be modified by practitioners to optimize individual patient outcomes; however, the ultimate return to play decision is based on the Head Team Physician's, or his/her designee's, assessment of the student-athlete using multiple means of evaluation.

This policy will be reviewed annually to ensure compliance with recognized consensus statements and NCAA standards.

Concussion Prevention

- Primary prevention strategies include delivering safety-first annual education, coaching proper technique, and enforcing the rules of play in all sports.
- Coaches are encouraged by the administration and medical staff to reduce gratuitous contact during practice. This is accomplished by limiting the number and repetitions of contact drills to those deemed necessary.
- Athletes are coached to take their head out of contact through the execution of specific drills designed to repeat appropriate technique and head out of contact behaviors.
- Secondary prevention strategies include obtaining an accurate head injury history, accurate and timely symptom reporting, and appropriate return to play management.
- NU will monitor and adhere to appropriate inter-association consensus statements regarding head trauma, which include following specific practice contact guidelines and limitations.
- NU will educate coaches and administrative staff continually through the Northwestern University Presidential Directive, which states that medical staff (e.g. team physicians and athletic trainers) will have the unchallengeable authority to make medical decisions including, but not limited to, removal from and return to play.

Annual Education

The student-athlete is expected to be an active participant in their own healthcare. As such, the student-athlete has the direct responsibility for reporting all injuries. Annually, each student-athlete, coach, sport administrator (including the Director of Athletics), staff athletic trainer (AT) and team physician will be provided with education on head injuries and the importance of immediately reporting symptoms of a head injury/concussion to

the sports medicine staff (Appendix A).

Additionally, each student-athlete, coach, sport administrator, staff athletic trainer, and team physician will acknowledge that they have been provided educational materials on head injury/concussion (Appendix B) and will be given an opportunity to ask questions about areas and issues for which they would like further clarification.

Baseline Testing

- Neurocognitive testing including symptom evaluation, brain injury history, concussion injury history and cognitive assessment will be administered to all student-athletes in conjunction with their pre-participation physical.
 - In the vast majority of cases, computerized neurocognitive testing (Appendix C) will be used for baseline evaluation. However, NU Sports Medicine recognizes that some student-athletes may have significant co-morbidities and/or may be unable to complete a valid computerized test. In these cases, the team physician, in conjunction with a neuropsychologist, will decide the most appropriate means of obtaining a baseline neurocognitive assessment and whether that baseline will need to be updated during the individual's tenure as a student-athlete.
 - When computerized baseline neurocognitive testing is utilized, it will occur during the 1st year of athletic participation and will occur again in the 3rd year of participation if applicable. Further administration of baseline neurocognitive testing will occur at the discretion of the team physician on an individual basis.
 - A team physician and neuropsychologist will review all baseline test results to verify that an accurate, normalized baseline result exists. If a test abnormality is discovered, subsequent tests will be administered under the direction of the team physician and recommendation of the neuropsychologist. A team physician will determine pre-participation clearance based off of the pre-participation assessment information described above.
- The tandem gait assessment will assess balance and motor control systems. The student-athlete will demonstrate that they can successfully complete the tandem-gait assessment at baseline. Successful completion of the tandem gait assessment will consist of walking heel to toe in a straight line, down and back, a length of 3 meters in under 14 seconds. If the student-athlete cannot successfully complete the tandem gait assessment at baseline, they will be assessed with the modified Balance Error Scoring System (BESS). In the event that the modified BESS is utilized as the student-athlete's baseline, it will be re-administered yearly until which time they can successfully complete the tandem gait assessment.
- A baseline vestibular/ocular motor screen will be performed by the AT or team physician.

Concussion Evaluation

- Northwestern University Sports Medicine competition and practice coverage policies ensure compliance with NCAA recommendations for “presence” and “availability” of medical personal at contact/collision sports competitions and practices, respectively.
- Upon sustaining a head injury, or if a head injury is suspected, the student-athlete will be removed from participation and will be evaluated for concussion by the team physician/athletic trainer, provided other serious injuries do not take precedence.
 - The concussion evaluation includes, but is not limited to, symptom assessment, physical and neurological exam, cognitive assessment, balance and motor control exam, ocular exam and clinical exam to rule out presence of potential catastrophic injury, including but not limited to, cervical spine trauma, skull fracture, and/or intracranial hemorrhage (Appendix D).
 - If there is evidence of a spinal injury, prolonged loss of consciousness, focal neurological deficit suggestive of intracranial trauma, Glasgow Coma Scale < 13, repetitive emesis, consistently diminished mental status, or other neurological signs and symptoms on the initial management, the team physician/athletic trainer will arrange immediate transport for emergency medical evaluation.
 - If deemed in the best interest of the student-athlete by the team physician/athletic trainer, evaluations that occur on the sideline of practice or competition may be abbreviated or discontinued once concussion is suspected or diagnosed to allow for appropriate monitoring and determination of clinical follow up planning.
 - If the clinician suspects that the athlete has suffered a concussion, the student-athlete must be removed from that practice/contest immediately and for the remainder of that day and monitored for any significant worsening of symptoms.
- Prior to leaving the team physician or AT for the day, education should be provided to both the student-athlete and another responsible adult, with consent of the student-athlete, and will include a signed acknowledgement (Appendix E).
- Post-concussion evaluation by a team physician will be scheduled following the concussive event.
- The team physician or his/her designee will make final decision on disposition status.
- If the team physician, or his/her designee, does not classify the head injury as a concussion, return-to-play will be at the discretion of the team physician or AT.

Post-Concussive Care

Initial Management

- Student-athletes diagnosed with a concussion will be instructed to maximize symptom-limited physical and cognitive rest during the acute

phase following injury.

- In conjunction with the team physician, the AT will document communication of appropriate recommendations, restrictions, limitations and necessary adaptations to the student-athlete and another responsible adult (Appendix E).
- The team physician and/or AT will document communication of identified recommendations, restrictions, limitations and necessary adaptations to the appropriate athletic department support staff (e.g. Coaches, Sport Performance Coaches, Academic Support Staff, and Equipment Staff) (Appendix F).
- Serial evaluation, consisting at minimum of symptom checklists, should be completed on a regular basis, as deemed appropriate by the team physician and/or athletic trainer for the individual case.

Return to Play Progression

The return to play progression is based in part on accurate symptom reporting. A team physician/AT will make the determination of “baseline symptoms”. The process for return to play is outlined here.

- Once the student-athlete is evaluated by the team physician and/or athletic trainer as being at baseline symptom level and having a normal exam, the student-athlete will undergo a supervised, slow-moderate intensity, cardiovascular exertion to assess for exacerbation/return of symptoms
- If exertion does not exacerbate baseline symptoms, the student-athlete should complete post-concussive neurocognitive and balance/motor control testing. Neurocognitive testing should not occur prior to 3 hours following exertion. Both the team physician and neuropsychologist will review results of neurocognitive testing, and the neuropsychologist will submit his/her impression to the team physician for consideration.
- If repeat neurocognitive and/or motor control testing is not determined to be within baseline measures, despite the return to baseline symptoms and normal exertion testing, further evaluation by the team physician may occur. The team physician may determine that referral to an appropriate sub-specialist is warranted.
- If the student-athlete remains at baseline symptoms with an exertional challenge and the post-injury neurocognitive and motor control testing is determined to be acceptable by the team physician, the student-athlete, under direction of an AT, will progress through a graded exercise program. Listed here is an example of this graded exercise program.

Stage 1: Symptom-limited physical and cognitive rest

Stage 2: Non-impact cardiovascular activity without resistance

Stage 3: Sports specific activities with increased intensity without increased threat of contact from others

Stage 4: Non-contact training involving others; may start progressive resistance training

Stage 5: Unrestricted training/practice, including contact/collision

Stage 6: Return to full participation, including competition

- A typical timeframe for progression between stages consists of approximately one day. However, if activity at any stage results in an exacerbation of baseline symptoms, or new symptoms, then the activity should be stopped and restarted the next day if symptom exacerbation subsides. In cases of recurrent symptoms, the treating team physician should be notified and will determine whether re-evaluation is warranted.
- Some student-athletes may have minimal concussive symptomology with minimal symptom duration and no modifying factors (conditions that may prolong recovery). In scenarios of this nature, the team physician may consider modifying the return to play progression if the student athlete participates in a sport or activity which presents minimal risk for contact or head injury beyond that of normal activities of daily living.
 - Modifying factors which may prolong recovery may include, but not be limited to:
 - Atypical or prolonged recovery pattern from concussion
 - Migraine
 - ADHD or other learning disability
 - Vestibular and/or oculomotor disturbance
 - Sleep dysfunction
 - Depression, anxiety, or other behavioral or mental illness
- Important components of management after the initial period of symptom-limited physical and cognitive rest may include associated therapies such as cognitive, vestibular, ocular, physical, and psychological therapy, and consideration of assessment of other causes of prolonged symptoms. If the student-athlete experiences prolonged symptoms or if severity of symptoms increases, the team physician and/or athletic trainer may consider additional evaluation through referral to another qualified provider.
- Prior to final clearance the student athlete will have a routine return to play evaluation by an independent neurological consultant.
- Final clearance will be determined in consideration of multiple factors: the student-athlete returning to baseline symptoms at rest and with progressive activity, interpretation of neurocognitive testing, normalized motor control testing, a physical examination, and successful completion of the graded exercise program.
- The final return to play decision is made by an NU team physician, or designee, in consultation with a neuropsychologist, independent

- neurological consultant, and other specialist(s) as appropriate.
- Special academic accommodations should be considered for the concussed student-athlete as described below.

Return to School/Learn

Return to school (RTS) [physically attending classes] and return to learn (RTL) [engaging cognitively in the educational process] recommendations should be made within the context of a multi-disciplinary team that includes, but is not limited to physicians, athletic trainers, academic advising staff, coaches, administrators, professors and teammates. In each case, a point person within the multi-disciplinary team will coordinate RTS/RTL with the student-athlete. RTS/RTL multidisciplinary team members should be well versed in their roles and responsibilities and keep communication open among all parties regarding decisions to progress, regress, or maintain status quo during the RTS/RTL process.

Multidisciplinary Teams may include:

- **Medical Team:** *Role-* evaluate the concussion, assess for more serious injury, prescribe physical and cognitive rest as appropriate until symptom-free, manage rehabilitation and act as the primary communication line to the Academic and Family Teams as appropriate. Team members include, but are not limited to Team Physician, Staff Athletic Trainer (AT), Neurological Sub-specialist, Psychologist, and Psychiatrist. The AT will serve as the point person to navigate the RTS/RTL process.
- **Academic Team:** *Role-* to coordinate the return to cognitive exertion and help to facilitate the appropriate level of academic adjustments and learning aids necessary to reduce or eliminate symptoms. Team members include, but are not limited to Athletic Academic Advisor, Campus Academic Advisor, Faculty Athletic Representative, Assistant Dean of Students, Office of Services with Students with Disabilities (AccessibleNU), Sport Administrator, Academic Dean, Professors and teaching assistants.
- **Family Team:** *Role-* to enforce rest and reduce cognitive stimulation to the student during the recovery process. Team members include, but are not limited to roommates, teammates, parents, coaches, and close friends.

When prescribed, cognitive rest following concussion or suspected concussion means avoiding academic-related activity that causes an increase in symptoms. This includes no classroom activity on the same day as the concussion. The gradual return to cognitive activity is based on the return of concussion symptoms following cognitive exposure. An individualized plan will be developed that will consider the following:

- Once the student-athlete can tolerate light cognitive activity s/he should begin the RTS and RTL processes in a stepwise manner coordinated by the medical and academic teams.
- Separate but concurrent plans for RTS and RTL will be considered by the

medical and academic teams. On an individual basis, certain contextual factors may favor some student-athletes physically returning to the classroom without fully engaging in the educational process.

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- The Medical Team and the Academic Team, on a case-by-case basis, should decide the levels of adjustment required.
- If concussion symptoms worsen with academic challenges, the student will be re-evaluated by the team physician.
- An example of an individualized plan may be
 - Stage 1: Symptom-limited cognitive activity that may include little to no academic work or classroom attendance
 - Stage 2: Return to the classroom that may or may not involve increased cognitive activity with appropriate rest breaks planned
 - Stage 3: Partial return to academic activity, with a step-wise progression and appropriate adjustments, accommodations, or modifications individualized to the student-athlete and their area of study
 - Stage 4: Full return to academic activity without adjustment, accommodation, or modification.

RTS/RTL management becomes more challenging when the student has ongoing symptoms for greater than 10-14 days. In those cases, the Multidisciplinary Team will re-evaluate the student and may need to enact academic adjustment, accommodation, or modification.

Academic Adjustment – the student’s academic schedule requires some modification in the first week or two following concussion. In this case, full recovery is anticipated, and the student will not require any meaningful curriculum or testing alterations. The Medical Team will communicate missed class excuses with the Academic Team and will encourage the Academic Team to consider temporary academic adjustments matched to the individual student-athlete’s symptom burden. These adjustments may include:

<u>Symptom</u>	<u>Adjustment</u>
Headaches	Frequent breaks Identifying aggravators and reducing exposure Rest in quiet areas
Dizziness	Referral to Medical Team Avoid the initiating stimuli
Visual Symptoms	Reduce exposure to computers, tablets, smart boards Reduce brightness on screens Use of hat or sunglasses indoors Turn off fluorescent lights as needed (in dorm) Seat closer to center of classroom (for blurry vision)

Noise Sensitivity	Consider use of earplugs Early dismissal to avoid crowded hallways
Difficulty Concentrating	Avoid (delay) testing or completion of major projects Extra time to complete non-standardized tests Consider the use of pre-printed notes, note takers, Smart Pen, or reader for oral test taking
Sleep Disturbances	Allow for prolonged rest breaks

Academic Accommodation – the student has persistent symptoms and may require change in the class schedule as well as special arrangements for exams, projects and papers. There is no timeline for academic accommodation. The Medical Team will communicate ongoing symptoms with the athletic department members of the Academic Team. The athletic department Academic Team members will work closely with the full Academic Team, including all campus resources, to enact necessary adjustments in the school setting in compliance with the American Disabilities Act Amendments Act (ADAAA).

Academic Modification – a more challenging scenario in which the student suffers with prolonged cognitive difficulties, which may require a more specialized educational plan in compliance with ADAAA. The Academic Team, in conjunction with on-campus resources like AccessibleNU and Learning Specialists will coordinate the educational plan. Additionally, prolonged symptoms that remove a student from the classroom for an extended period may require a Medical Leave for the remainder of the academic quarter. This intervention will require detailed coordination between the student and the Academic Team, in consultation with the Medical Team.

Comorbid conditions such as mental health issues (i.e. depression), ADHD, learning disabilities, and sleep disorders have been reported as a consequence of sport-related concussion. Although mental health issues may be multifactorial in nature, the treating team physician will consider these issues in the treatment recommendations and communicate with multidisciplinary team.

Although healing may be prolonged with some concussions, the expectation is still for a full recovery that no longer would require academic adjustments, accommodations, or modifications.

Staff and Faculty Education Plan: Given the large number of concussions occurring each year, education of all individuals involved is paramount to helping students who may need assistance. Education will be available annually to the academic community regarding concussion, symptoms, the role of cognitive and physical rest, and RTL strategies should they request it. Specifically, it is recommended that individuals directly involved in the management of a concussed student-athlete to receive ongoing, tailored education as needed.

Return to Learn Resources:

Center for Disease Control and Prevention: Heads Up for Schools
www.cdc.gov/concussion/HeadsUp/schools.html

Center for Disease Control and Prevention: Fact Sheet for School Professionals on Returning to School after a Concussion
www.cdc.gov/concussion/pdf/TBI_Returning_to_School-a.pdf

Brain 101: Concussion Handbook: <http://brain101.orcasinc.com/1000>

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Northwestern University Intercollegiate Sports Medicine CONCUSSION EDUCATION

What is a concussion?

A concussion is an injury to the brain caused by a direct or indirect blow to the head. It results in your brain not working as it should. The concussion may or may not cause you to black out or pass out. It can happen from a fall, a hit to head, or a hit to the body that causes your head and your brain to move quickly back and forth. The concussion can present itself differently for each athlete and can occur during practice or competition in any sport.

How do I know if I have a concussion?

There are many signs and symptoms, ranging from mild to severe, that you may have after a concussion. A concussion can affect your thinking, the way your body feels, your mood, or your sleep. Signs and symptoms may not happen right away. Here is what to look for in the following symptoms:

Thinking	Physical	Emotional/Mood	Sleep
<ul style="list-style-type: none"> • Difficulty remembering • Slowed reaction time • Taking longer to figure things out • Difficulty concentrating • Difficulty thinking clearly 	<ul style="list-style-type: none"> • Feeling sick to your stomach/queasy • Headache • Fuzzy or blurry vision • Dizziness • Vomiting/throwing up • Balance problems • Sensitivity to noise or light 	<ul style="list-style-type: none"> • Irritability-things bother you more easily • Sadness • Crying more • Being more moody • Feeling nervous or worried 	<ul style="list-style-type: none"> • Sleeping more than usual • Feeling tired • Sleeping less than usual • Trouble falling asleep

Table is adapted from the Centers for Disease Control and Prevention (<http://www.cdc.gov/concussion/>).

What should I do if I think I have a concussion?

If you are having any of the signs or symptoms listed above, you should tell your athletic trainer, team physician, coach, teammate, or parents so you can get the help you need. If a parent notices these symptoms, he or she should inform the athletic trainer.

When should I be particularly concerned?

If you have a headache that gets worse over time, you are unable to control your body, you throw up repeatedly or feel more and more sick to your stomach, or your words are coming out funny or slurred, let your athletic trainer, coach, team physician, parent know right away, so you can get the help you need before things get any worse.

What are some of the problems that may affect me after a concussion?

You may have trouble in some of your classes at school or even with activities at home. Avoid prolonged studying, computer work, and video games. If you continue to play or return to play too early after a concussion, you may have long term trouble remembering things or paying attention, headaches may last a long time, or personality changes can occur. Once you have a concussion, you are more likely to have another concussion.

How do I know when it's OK to return to physical activity and my sport after a concussion?

After telling your athletic trainer, team physician, coach, parent, or any available medical staff that you think you have a concussion, you will be seen by a physician trained in helping people with concussions. Your school has a policy in place on how to treat concussions. You should not return to play or practice on the same day as your suspected concussion occurred.

You should not begin the return-to-play progression until all symptoms are gone, both at rest and during the after activity. Symptoms indicate that your brain has not yet recovered from the concussion and needs more rest. Severe brain injuries can change your whole life.

Appendix B
Northwestern University Intercollegiate Sports Medicine
CONCUSSION EDUCATION ACKNOWLEDGEMENT FORM

The NU Intercollegiate Sports Medicine team expects the student-athlete to be an active participant in their own healthcare. As such, the student-athlete has the responsibility for reporting all of his/her injuries and illnesses to the sports medicine staff of Northwestern (e.g., team physician, athletic trainer), including head injury and concussion. The student-athlete recognizes that his/her condition is dependent upon an accurate medical history and a full disclosure of any symptoms, complaints, prior injuries and/or disabilities experienced.

Annually, each student-athlete will be provided with education on head injuries and the importance of immediately reporting symptoms of a head injury/concussion to the sports medicine staff.

Additionally, each student-athlete will acknowledge that Northwestern has provided educational materials on what a concussion is and given student-athletes an opportunity to ask questions about issues that are not clear.

By signing below I, _____, have read the above and agree that the statements are accurate.

Signature of student-athlete

Date

Jeff Mjaanes MD

Head Team Physician

Signature of Head Team Physician

Utilized and Administered by:

Northwestern University
Intercollegiate Sports Medicine



ImPACT's Test is computerized and takes about 25 minutes to complete. ImPACT recommends that it be administered by an ImPACT trained athletic trainer, school nurse, athletic director, team doctor or psychologist. Baseline tests are suggested every two years. If a concussion is suspected, the baseline report will serve as a comparison to a repeat ImPACT test, which professionals can use to assess potential changes or damage caused by a concussion.

IMPACT Features

- Measures player symptoms
- Measures verbal and visual memory, processing speed, and reaction time
- Reaction time measured to a 1/100th of second
- Provides reliable baseline test information
- Produces a comprehensive report of test results
- Automatically stores data from repeat testing

The test modules consist of a near infinite number of alternate forms by randomly varying the stimulus array for each administration. This feature was built in to the ImPACT Test to minimize the "practice effects" that have limited the usefulness of more traditional neurocognitive tests.

The program measures multiple aspects of cognitive functioning in athletes, including:

- Attention span
- Working memory
- Sustained and selective attention time
- Response variability
- Non-verbal problem solving
- Reaction time

Section 1: Demographic Profile and Health History Questionnaire

- Section 1 of the ImPACT Test requires the test-taker to input basic demographic information and descriptive information through a series of easy-to-follow instructional screens. The test-taker inputs this information via a keyboard and must utilize an external mouse to navigate/select responses on the screen.
- Many of the questions can be answered using "pull down" menus in the window. This section asks the test-taker to answer questions regarding height, weight, sport, position, concussion history, history of learning disabilities and other important descriptive information.

Section 2: Current Concussion Symptoms and Conditions

- This section of the ImPACT Test asks questions about the test-taker's most recent concussion date, hours slept last night, and current medications. The test-taker is then to rate the current severity of 22 concussion symptoms via a 7-point Likert scale.
- This Likert scale is currently utilized by the NFL and NHL and has been endorsed by the Vienna Concussion in Sports (CIS) group.
- The concussion symptom scores are displayed in the ImPACT test report along with the symptom total score.



PHYSICAL

Headache
Nausea
Vomiting
Balance Problems
Dizziness
Visual Problems

Fatigue
Sensitivity to Light
Sensitivity to Noise
Numbness/Tingling
Dazed or Stunned



COGNITIVE

Feeling mentally foggy
Feeling slowed down
Difficulty concentrating
Difficulty remembering

Forgetful of recent information or conversation
Confused about recent events
Answers questions slowly
Repeats questions



EMOTIONAL

Irritability
Sadness
More Emotional
Nervousness



SLEEP

Drowsiness
Sleeping less than usual
Sleeping more than usual
Trouble falling asleep

Section 3: Baseline and Post-Injury Neurocognitive Tests

- After completing the Demographic and Current Symptoms, the test-taker will begin the neurocognitive test section, which is comprised of six modules.
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- *Module 1: Word Discrimination*

- Evaluates attentional processes and verbal recognition memory utilizing a word discrimination paradigm.
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- *Module 2: Design Memory*

- Evaluates attentional processes and visual recognition memory using a design discrimination paradigm.
-

- *Module 3: X's and O's*

- Measures visual working memory as well as visual processing speed and consists of a visual memory paradigm with a distractor task that measures response speed
-

- *Module 4: Symbol Matching*

- Evaluates visual processing speed, learning and memory.
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- *Module 5: Color Match*

- Represents a choice reaction time task and also measures impulse control and response inhibition.
-

- *Module 6: Three Letter Memory*

- Measures working memory and visual-motor response speed.

Section 4: Graphic Display of ImPACT Test Scores

There are five ImPACT Test scores calculated from the neuropsychological tests administered, and each is displayed graphically:

Composite 1: Verbal Memory Composite

This score is comprised of the average of the following scores:

- Total memory percent correct
- Symbol match (total correct hidden symbols)
- Three letters (total percent of total letters correct)

A higher score indicates better performance on the Verbal Memory Composite.

Composite 2: Visual Memory Composite

This score is comprised of the average of the following scores:

- Design memory (total percent correct score)

- X's and O's (total correct memory score)

A higher score indicates better performance on the Visual Memory Composite.

Composite 3: Processing Speed Composite

This score is comprised of the average of the following scores:

- X's and O's (total correct (interference))
- Three-letters (average counted correctly)

A higher score indicates better performance on the Processing Speed Composite.

Composite 4: Reaction Time Composite

This score is comprised of the average of the following scores:

- X's and O's (average correct RT (interference))
- Symbol match (average correct RT/3)
- Color match (average correct RT)

A lower score indicates better performance on the Reaction Time Composite.

Composite 5: Impulse Control Composite

This score is comprised of the average of the following scores:

- X's and O's (total incorrect (interference))
- Color match (total commissions)

A lower score indicates better performance on the Impulse Control composite.

Total Symptom Composite

This score represents the total for all 22 symptom descriptors. A lower score indicates fewer endorsed symptoms by the test-taker. This series of graphs allows direct comparison of test performance in these core areas across multiple testing sessions. The composite scores were constructed to provide summary information regarding different broad cognitive domains. Thus far, ImPACT's studies have indicated the verbal memory, visual memory, processing speed, reaction time and symptom scores assist in making a determination between concussed and non-injured individuals.

Appendix D



Northwestern University Sports Medicine HEAD-INJURY SIDELINE EVALUATION TOOL



Patient _____	Sport _____
Date Completed _____	Time Completed _____
Injury Date _____	Injury during: PRACTICE / GAME / Other _____
Injury Time _____	Other Circumstances _____
Exam Location _____	Opponent _____

A. Maddocks Score - Did they provide correct answers

What venue are we at today?	Yes	No
What half (period, quarter (is it now?))	Yes	No
Who scored last in this match?	Yes	No
What team did you play last week/game?	Yes	No
Did you team win the last game?	Yes	No

B. Mechanism of Injury

C. Hours of sleep last night _____	Average hours of sleep per night _____
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D. Symptom Checklist - Athlete should score themselves on the following symptoms, as applicable, based on how they feel at the time checklist is completed. (I.e. 0 = none/non present, 1 = mild, 3 = moderate, 6 = severe)

Headache	0 1 2 3 4 5 6	Irritability	0 1 2 3 4 5 6
Nausea	0 1 2 3 4 5 6	Sadness	0 1 2 3 4 5 6
Vomiting	0 1 2 3 4 5 6	Nervousness	0 1 2 3 4 5 6
Balance problems	0 1 2 3 4 5 6	Feeling more emotional	0 1 2 3 4 5 6
Dizziness	0 1 2 3 4 5 6	Numbness or tingling	0 1 2 3 4 5 6
Fatigue	0 1 2 3 4 5 6	Feeling slowed down	0 1 2 3 4 5 6
Trouble falling asleep	0 1 2 3 4 5 6	Feeling mentally foggy	0 1 2 3 4 5 6
Sleeping more than usual	0 1 2 3 4 5 6	Difficulty concentrating	0 1 2 3 4 5 6
Sleeping less than usual	0 1 2 3 4 5 6	Difficulty remembering	0 1 2 3 4 5 6
Drowsiness	0 1 2 3 4 5 6	Visual problems	0 1 2 3 4 5 6
Sensitivity to light	0 1 2 3 4 5 6		
Sensitivity to noise	0 1 2 3 4 5 6		

E. If you knew the patient well prior to injury, how different is the patient acting compared to usual self?

No different	Different	Unsure	N/A
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G. Orientation - Did they provide correct answers

What month is it?	Yes	No
What is the date today	Yes	No
What is the day of the week?	Yes	No
What year is it?	Yes	No
What time is it right now? (within an hour)	Yes	No

H. Immediate Memory - Word Recall

5 Words read to patient _____

Immediate Recall #1: Yes No	Immediate Recall #2: Yes No	Immediate Recall #3: Yes No
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**Indicate to patient that delayed recall will be tested in approximately 5 minutes

I. Concentration: Digits Backwards - Did they provide correct answers

4, 9, 3	Yes	No	1, 7, 9, 5	Yes	No
6, 2, 9, 7, 1	Yes	No	8, 3, 1, 9, 6, 4	Yes	No

J. Concentration - Months in Reverse Order (Did they provide a correct sequence)

Dec - Nov - Oct - Sept - Aug - Jul - Jun - May - Apr - Mar - Feb - Jan Yes No

K. Delayed Word Recall

Words recalled _____ Yes No

L: Tandem Gait - balance evaluation (patient walks heel to toe for 3 meters and back while being timed <14 seconds)

Test surface: _____ ****Remove shoes**

Test #1 _____ Test #2 _____ Test #3 _____ Test #4 _____

M: VOMS (0 = No symptoms 10 = Most severe)

Vestibular/Oculomotor	Headache	Dizziness	Nausea	Fogginess	Comments
Baseline Symptoms	_____				
Smooth Pursuit	_____				
Saccades (Horizontal)	_____				Score 1 _____
Saccades (Vertical)	_____				Score 2 _____
Convergence (Near Point) (cm)	_____				Score 3 _____
VOR Horizontal	_____				Final Conv. _____
VOR Vertical	_____				
Visual Motion Sensitivity	_____				

N: Cranial Nerves

I. Olfactory	Intact	Not Intact	VII. Facial	Intact	Not Intact
II. Optic	Intact	Not Intact	VIII. Vestibulocochlear	Intact	Not Intact
III. Oculomotor	Intact	Not Intact	IX. Glossopharyngeal	Intact	Not Intact
IV. Trochlear	Intact	Not Intact	X. Vagus	Intact	Not Intact
V. Trigeminal	Intact	Not Intact	XI. Spinal accessory	Intact	Not Intact
VI. Abducens	Intact	Not Intact	XII. Hypoglossal	Intact	Not Intact

O: Cervical Spine

WNL
 Abnormal _____ ROM _____ Tenderness _____

P: Sensory/Motor Exam:

WNL
 Abnormal _____

Completed by: _____ Physician Present: **YES** **NO**

Physician Notified: _____ Physician Signature: _____

NOTES:

Appendix A
**Northwestern University Intercollegiate Sports Medicine
POST-INJURY EDUCATION**

About Your Diagnosis

A concussion is an injury to the brain caused by a blow to the head, neck or body, or by striking the head with another object. It may, or may not, result in loss of consciousness or confusion. It may cause amnesia or loss of memory about the events related to the concussion as well as a variable amount of time before or after. Many individuals with a concussion may also be dizzy, have a decrease in muscle coordination or have a decrease in their ability to concentrate. The effects of a concussion usually resolve completely within a few hours or days.

What can you do to speed recovery?

If any of the symptoms below develop before the follow up appointment with either your athletic trainer or team physician, please call your athletic trainer or sports medicine staff immediately.

- Decreasing level of consciousness
- Increasing confusion
- Increasing irritability
- Loss of or fluctuating level of consciousness
- Numbness in the arms or legs
- Pupils becoming unequal in size
- Repeated vomiting
- Seizures
- Slurred speech or inability to speak
- Inability to recognize people or places
- Worsening headaches

Otherwise, you can follow the instructions outlined below.

It is OK to

- Use acetaminophen (Tylenol) for headaches
- Use ice pack on head and neck as needed for comfort
- Go to sleep and get plenty of rest
- Keep meals light, but carbohydrate-rich, and stick to clear fluids
- Discuss current medications with physician to see if you should stop taking them while recovering

Do NOT

- Drink alcohol
- Do not use aspirin or ibuprofen type medications
- Drive a car or operate machinery
- Engage in physical activity (e.g., exercise, weight lifting, sport participation)
- Engage in mental activity (e.g., classwork, homework, job, TV, computer games, cell phone use, email) that makes symptoms worse or until your team physician has laid out your recovery plan
- Lie about your symptoms being better as it will put you at more risk

I, _____, acknowledge that I have to be an active participant in my own healthcare. As such, I have the direct responsibility for reporting to the sports medicine staff of my institution. I recognize that my true physical condition is dependent upon an accurate medical history and a full disclosure of any symptoms and complaints. I hereby affirm that I will also disclose any future symptoms and complaints related to my concussion.

I have been provided with education on post-concussion care and understand the importance of immediately reporting symptoms of a head injury/concussion to my sports medicine staff member(s).

By signing below, I acknowledge that my institution has provided me with specific educational materials on post-concussion care, gave me an opportunity to ask questions about areas and issues that are not clear to me on this issue, and consent to the sports medicine team sharing the educational materials with a responsible adult to aid in my care.

Signature of Student-Athlete

Date

Signature of Healthcare Provider Date

Signature of Responsible Adult Date

**Northwestern University Intercollegiate Sports Medicine
Post-Head Injury Care Recommendations for Support Staff**

Student-Athlete _____ M F Examination Date _____

Injury Date _____

Sport _____

Team Physician _____

Primary Concussion Mechanism

Sport Performance Recommendations/Limitations

Name:

Academic Services Recommendations/Limitations

Name:

Equipment Staff Recommendations/Limitations

Name:

Other Support Staff Recommendations/Limitations

Name(s):

Athletic Trainer _____

Date _____

Team Physician _____

Date _____

Northwestern University Intercollegiate Sports Medicine POST-HEAD INJURY SYMPTOM CHECKLIST

Student-Athlete: _____

Date of Injury: _____

Sport: _____

Date and Time Checklist Completed: _

Headache	0	1	2	3	4	5	6
Nausea	0	1	2	3	4	5	6
Vomiting	0	1	2	3	4	5	6
Balance problems	0	1	2	3	4	5	6
Dizziness	0	1	2	3	4	5	6
Fatigue	0	1	2	3	4	5	6
Trouble falling asleep	0	1	2	3	4	5	6
Sleeping too much	0	1	2	3	4	5	6
Sleeping too little	0	1	2	3	4	5	6
Drowsiness	0	1	2	3	4	5	6
Sensitivity to light	0	1	2	3	4	5	6
Sensitivity to noise	0	1	2	3	4	5	6
Irritability	0	1	2	3	4	5	6
Sadness	0	1	2	3	4	5	6
Nervousness	0	1	2	3	4	5	6
More emotional	0	1	2	3	4	5	6
Numbness/Tingling	0	1	2	3	4	5	6
Feeling slowed down	0	1	2	3	4	5	6
Feeling mentally foggy	0	1	2	3	4	5	6
Difficulty concentrating	0	1	2	3	4	5	6
Difficulty remembering	0	1	2	3	4	5	6
Visual problems	0	1	2	3	4	5	6
Do the symptoms get worse with physical activity?					Yes	No	N/A
Do the symptoms get worse with mental activity?					Yes	No	N/A
If 100% was your baseline, how would you rate yourself today?							

Total number of symptoms (max

possible 22) Symptom severity score

(max possible 132)

Signature of Administer

Printed Name of Administer

