

UNIVERSITY OF FLORIDA

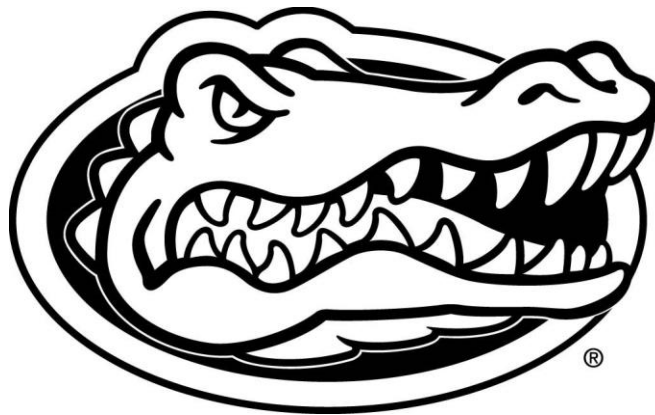
UNIVERSITY ATHLETIC ASSOCIATION

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**Concussion Management Plan**

2019-2020 Academic Year

Revised April 2019



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# Concussion Management Plan

## *University of Florida Athletic Association*

### ***Purpose***

The purpose of the University of Florida Athletic Association (UAA) Concussion Management Plan (CMP) is to provide guidelines for evaluation and management of possible sports-related concussive injuries.

The UAA CMP complies with the NCAA Concussion Policy and Legislation, set forth by the NCAA Committee on Competitive Safeguards and Medical Aspects of Sports (CSMAS).

The NCAA Concussion Policy and Legislation states the CMP facilitates the following:

1. An annual process that ensures student-athletes are educated about the signs and symptoms of concussion;
2. A process that ensures a student-athlete who exhibits signs, symptoms or behaviors consistent with a concussion shall be removed from athletic activities and evaluated by a medical staff member with experience in the evaluation and management of concussion;
3. A policy that precludes a student-athlete diagnosed with a concussion from returning to athletic activity for at least the remainder of that calendar day; and
4. A policy that requires medical clearance for a student-athlete diagnosed with a concussion to return to athletic activity as determined by a physician or the physician's designee.

This document will serve as the official CMP for the UAA and will be transmitted to the required/designated organizations for compliance with NCAA concussion management policies and procedures. The CMP is authored and revised by the UAA Concussion Committee and approved by the appointed Athletics Health Care Administrator.

### ***Definition of Concussion***

The Berlin 2016 Consensus Statement on Concussion in Sport provides the following definition of concussion:

*Sports related concussion (SRC) is a traumatic brain injury induced by biomechanical forces*

- *May be caused either by a direct blow to the head, face, neck or elsewhere on the body with an impulsive force transmitted to the head.*
- *Typically results in the rapid onset of short-lived impairment of neurological function that resolves spontaneously. However, in some cases, signs and symptoms evolve over a number of minutes to hours.*
- *May result in neuropathological changes, but the acute clinical signs and symptoms largely reflect a functional disturbance rather than a structural injury and, as such, no abnormality is seen on standard structural neuroimaging studies.*

- *Results in a range of clinical signs and symptoms that may or may not involve loss of consciousness. Resolution of the clinical and cognitive features typically follows a sequential course. However, in some cases symptoms may be prolonged.*
- *The clinical signs and symptoms cannot be explained by drug, alcohol, or medication use, other injuries (such as cervical injuries, peripheral vestibular dysfunction, etc.) or other comorbidities (e.g., psychological factors or coexisting medical conditions). [1]*

## ***Education***

### **Coaches**

The CMP will be distributed annually to all coaches by the Athletics Health Care Administrator or designee. The NCAA Concussion Fact Sheet for Coaches (Appendix K) is also distributed to the coaching staff. Coaches will meet with Athletics Health Care Administrator / athletic trainer, and/or University of Florida Board of Trustees (UFBOT) physician to review questions regarding the above materials. The coaches will acknowledge their acceptance and understanding of the policy and educational information by signature (Appendix L).

### **Student-Athletes**

A one page handout, Statement of Student-Athlete Responsibility (Appendix N), which outlines the definition, symptoms and medical importance of concussion, is given to each incoming student-athlete. In addition, each student-athlete will receive a copy of the NCAA Concussion Fact Sheet for Student-Athletes (Appendix M). Each student-athlete will acknowledge review of the material and willingness to alert medical staff of concussion symptoms in themselves or teammates by signing the Statement of Student-Athlete Responsibility.

Annual concussion education will be provided to all student-athletes including a question/answer session. Student-athletes will be provided access to a UFBOT physician for any unresolved questions.

### **Sports Health Staff**

The sports health staff will review the CMP annually and each member of the sports health staff will acknowledge their acceptance and understanding of the policy by signature (Appendix L).

### **Directors Administration**

The Athletic Director and Executive Associate Athletics Director for Administration will review the CMP annually, and acknowledge their acceptance and understanding of the policy by signature (Appendix L).

## ***Evaluation and Management of Suspected Concussive Injuries***

### **1) Baseline Assessments**

- a) Past history of concussion(s) as reported by each student-athlete is documented on the UF Athletic Association Concussion History questionnaire that each student-athlete completes as part of their pre-participation evaluation (see Appendix A).
- b) A baseline assessment is recorded for each student-athlete prior to the first official team practice.

- c) After the student-athlete's first year, baseline testing is annual for the King-Devick Test (KDT) per manufacturer recommendations.
- d) Baseline assessment consists of the seven components listed below with the specific test used by the UAA in italics.
  - i) Symptom checklist – *SCAT3 Symptom Evaluation (S3SE)*, see Appendix B.
  - ii) Cognitive assessment - *Standardized Assessment of Concussion (SAC)* utilizing forms “A,” “B,” “C,” “D,” “E,” “F.” See Appendix C for examples of each form.
  - iii) Balance assessment - *Balance Error Scoring System (BESS)*, see Appendix D.
  - iv) Vision performance assessment – *King-Devick Test (KDT)* utilizing an iPad application.
  - v) Computerized Neuropsychological testing – *Immediate Post-Concussion Assessment and Cognitive Testing – (ImPACT™)*.
  - vi) Psychological Distress Measurement – *Brief Symptom Inventory-18 (BSI-18)*, see Appendix E.
- e) After a concussive injury, the baseline assessments are repeated at appropriate time intervals post-injury (sections 2 and 3) and placed on the Concussion Testing Summary form (Appendix G).
- f) Prior to ImPACT™ administration, the student-athlete may be shown a document with brief examples of each component on the ImPACT™ test. This document is referred to as the “ImPACT-Instructions” (see Appendix I). The goal of this extra instruction is to decrease test confusion and allow more accurate assessment of the student-athlete's ability.
- g) Athletic trainers for each sport and/or the concussion coordinator will alert their respective (UFBOT) physician when incoming student-athlete ImPACT™ baselines are complete. If a baseline has been flagged as abnormal by the ImPACT™ program, the UFBOT physician will alert the athletic trainer so arrangements can be made for retesting of the student-athlete.
- h) Clearance decisions for participation regarding concussion baseline testing and need for additional testing will be made by the UFBOT physician.

## 2) Initial Evaluation

- a) Medical personnel with training in the diagnosis, treatment, and initial management of acute concussion will be present at all NCAA varsity competitions in the following contact/collision sports: basketball, football, lacrosse, pole vault, and soccer. To be present means to be on site at the campus or arena of the competition. Medical personnel may be from either team, or may be independently contracted for the event
- b) Medical personnel with training in the diagnosis, treatment, and initial management of acute concussion will be available at all NCAA varsity practices in the following contact/collision sports: basketball, football, lacrosse, pole vault, and soccer. To be available means that, at a minimum, medical personnel can be contacted at any time during the practice via telephone, messaging, email, beeper or other immediate communication means. Further, the case can be discussed through such communication, and immediate arrangements can be made for the athlete to be evaluated
- c) **Assume a C-spine injury is present until proven otherwise.** Proceed with emergency action plan as indicated.
- d) After C-spine injury has been ruled out in a student-athlete with a suspected concussion, remove the student-athlete from the field of play.

- e) In addition to C-spine injury an emergency action plan will be followed for the following conditions:
- Glasgow Coma Scale < 13
  - Prolonged loss of consciousness
  - Focal neurological deficit suggesting intracranial trauma
  - Repetitive emesis
  - Persistently diminished/worsening mental status or other neurological signs/symptoms
- f) Removal is typically performed by the supervising athletic trainer but may also be performed by a coach or teammate if a concussion suspected. If play is stopped by a game official for suspected/possible concussion, the student-athlete involved shall leave the game and not return until cleared by the athletic trainer and ,if present, the UFBOT physician.
- g) After removal, evaluation will then be performed by the team physician or athletic trainer covering the event.
- h) The student-athlete will not return to play prior to this evaluation and approval by the UFBOT team physician, if present.
- i) Obtain a history of the injury.
- j) The **S3SE, SAC, BESS, and KDT** may be repeated within **0-6 hours post-injury** and compared to the baseline scores to aid in this initial evaluation.
- k) **As per NCAA guidelines, if a diagnosis of concussion is made, the student-athlete will not return to play that day.**
- l) No student-athlete with severe or unstable symptoms or findings will be released from medical care until appropriate evaluation and follow-up is obtained.
- m) Verbal and/or written Concussion Take Home Instructions (Appendix J) are given to the student-athlete and their roommate (or similar second person) to guide care at home until seen for further follow-up in the athletic training facility or physician's office.
- n) Arrangements are made to have a roommate, teammate or similar person to monitor them overnight.
- o) The student-athlete's academic advisor is notified when modifications of classroom activities are indicated.

### 3) Repeat Evaluations

- a) Repeat evaluations of the concussed student-athlete are performed in the athletic training facility or UFBOT physician's office and typically begin within 24-72 hours.
- b) The S3SE, SAC [utilizing a different form (Appendix C) from the previous test], BESS, KDT, BSI-18, and ImPACT™ may be repeated and compared to the baseline and initial evaluation scores to aid in the repeat evaluations.
- c) Prior to the first post-concussive administration of ImPACT™, the student-athlete may be shown the ImPACT-Instructions (Appendix I). Prior to subsequent post-concussive ImPACT™ testing, ImPACT-Instructions may be reviewed again if desired by the student-athlete.
- d) Repeat evaluations in addition to the initial 0-6 hour post-injury testing (section 2, j) may be performed at the time-points listed below.

- i) S3SE, SAC, BESS, KDT, ImPACT™, BSI-18– 24-48 hours post injury
- ii) S3SE– daily until the student-athlete is asymptomatic. Asymptomatic refers to scoring at or below baseline on the S3SE.
- iii) S3SE, SAC, BESS, KDT, ImPACT™, BSI-18– when allowed to begin Stage 1 of UF Concussion Return to Play Protocol (UFCRTPP) (+/- 1 day)
- iv) S3SE, SAC, BESS, KDT, ImPACT™, BSI-18– when allowed to begin Stage 5 of UFCRTPP (+/- 1 day)
- v) S3SE, SAC, BESS, KDT, ImPACT™, BSI-18– will be offered to each student-athlete at the time of their exit physical.

Some time-points may occur simultaneously. For example the 24-48 hour evaluation may occur at the same time the student-athlete becomes asymptomatic which may also be the same time the student-athlete is started on the UFCRTPP.

- e) Record results on the Concussion Testing Summary Form (Appendix G).
- f) The above time-points and specific tests are recommended, but may be altered to accommodate the needs and conditions of the student-athlete.
- g) Any student-athlete experiencing prolonged recovery will be evaluated by a UFBOT physician and referred to an appropriate consultant if necessary.

#### 4) **Graduated Return to Play**

- a) **Per NCAA guidelines there is no same day return to play for a student-athlete diagnosed with a concussion.**
- b) A concussed student-athlete is allowed to return to play only after the thorough evaluation described above, completion of the UF Concussion Return to Play Protocol (UFCRTPP), and clearance by a UFBOT physician.
- c) The UFCRTPP is described in Appendix H.
- d) The UFCRTPP is an incremental protocol starting with minimal cognitive, autonomic and vestibular activities in Stage 1 and gradually progressing in a stepwise fashion to full return to competition over Stages 2-6.
- e) Stage 1 of the UFCRTPP may begin after the repeat evaluation (see 3a above) of the concussed student-athlete if deemed appropriate by the examiner.
- f) The student-athlete may not progress from Stage 1 to Stage 2 of the UFCRTPP if symptoms occur with Stage 1 activities. If worsening symptoms have occurred, resume Stage 1 activities only after a period of rest.
- g) If any worsening of symptoms occur while in Stages 2-6 of the UFCRTPP, repeat the previous asymptomatic level and try to progress again after a period of rest.
- h) Document progression through UFCRTPP stages on the Concussion Testing Summary form (Appendix G).

#### 5) **Graduated Return to Learn**

- a) Return to Learn refers to resumption of cognitive activity such as attending classes, reading, studying, taking tests, and attending team meetings.



- b) Return to Learn begins with a period of relative cognitive rest and progresses in a stepwise fashion to more demanding cognitive activities.
- c) There will be no mandatory academic activity on same day as concussion.
- d) If symptoms return, reassess cognitive progression.
- e) A concussed student-athlete is allowed to return to cognitive activities after the thorough medical and testing evaluation described above and after consultation with the UAA academic team.
- f) The UAA academic team is a multidisciplinary group of individuals who can help coordinate and plan the student-athlete's Return to Learn. Multidisciplinary team members may include but are not limited to academic advisers, athletic trainers, learning specialists, and upon request, physicians.
- g) The Senior Associate Athletic Director for Academics at the Otis Hawkins Center for Academic and Personal Excellence will serve as the point person to navigate student-athletes through the return to learn process.
- h) Return to Learn plans are individualized to fit the needs of student-athletes returning to varied sports, courses and degree programs.
- i) The individualized Return to Learn plan, including accommodations, complies with the Americans with Disabilities Act Amendments Act.

#### 6) **Prolonged Symptoms**

The majority (80-90%) of concussed student-athletes have symptom resolution within 7-10 days. Student-athletes who have symptoms for longer periods may be treated with a multidisciplinary approach. This management may include light exercise which does not produce worsening symptoms and is initiated with physician guidance.

#### 7) **Non-Sports Related Concussions**

Student-athletes with concussion from non-sports related activities may also be treated according to the CMP.

#### 8) **Diagnosis and Clearance Determination**

The final decision for diagnosis and clearance for return to play rests with the UFBOT team physician.

## ***Computerized Neuropsychological Testing Affiliation***

As suggested by the NCAA, institutions using computerized neuropsychological testing benefit from an affiliation with a neuropsychologist to help with test application and interpretation. If necessary, the UAA has a consulting neuropsychologist available.

## ***Reducing Exposure to Head Trauma***

It is important to emphasize ways to minimize head trauma exposure to the extent reasonably possible in contact sports. Coaches and student-athletes will be responsible for taking a safety first approach, and exercise proper technique during all activities.

The UAA will incorporate the NCAA Inter-Association Consensus: Year-Round Football Practice Contact Guidelines for the football program.

## ***Administrative***

The NCAA Concussion Safety Protocol Committee will review the CMP annually. The plan will be submitted to the committee by May 1 of each year for review. A signed certificate of compliance from the appointed Athletics Health Care Administrator must accompany the submission to the committee.

## ***Availability***

As recommended by the NCAA, the CMP is publicly available upon request to the UAA Communications Department, (352) 375-4683.

## ***Reference***

1. McCrory, P., et al., *Consensus statement on concussion in sport-the 5(th) international conference on concussion in sport held in Berlin, October 2016*. Br J Sports Med, 2017.

## Appendix A: UF Athletic Association Concussion History Form

### UF Athletic Association Concussion History Form

Name: \_\_\_\_\_ Date: \_\_\_\_\_  
UF ID #: \_\_\_\_\_ - \_\_\_\_\_ Sport: \_\_\_\_\_  
How many years have you played this sport? \_\_\_\_\_

#### Education History – please circle

Years of education completed (excluding kindergarten): 12 13 14 Other: \_\_\_\_\_  
Received speech therapy Yes No  
Attended special education classes Yes No  
Repeated one or more years of school Yes No  
Diagnosed with a learning disability Yes No  
Problems with ADHD or hyperactivity Yes No  
Handedness Right Left Ambidextrous  
Native language: English Spanish Other: \_\_\_\_\_

#### Contact Sport History

How many years have you played the following sports

Boxing \_\_\_\_\_  
Field Hockey \_\_\_\_\_  
Football – tackle \_\_\_\_\_  
Ice Hockey \_\_\_\_\_  
Lacrosse \_\_\_\_\_  
Martial Arts \_\_\_\_\_  
Soccer \_\_\_\_\_  
Wrestling \_\_\_\_\_

#### Concussion History

Number of times diagnosed with a concussion: \_\_\_\_\_  
Dates of each concussion: \_\_\_\_\_  
Number of concussions which resulted in loss of consciousness: \_\_\_\_\_  
Number of concussions which resulted in confusion: \_\_\_\_\_  
Number of concussions which resulted in difficulty remembering events **after** the injury: \_\_\_\_\_  
Number of concussions which resulted in difficulty remembering events **before** the injury: \_\_\_\_\_  
Total games missed as a result of all concussions combined: \_\_\_\_\_

#### Treatment History – please circle

Treatment for headaches by a physician Yes No  
Treatment for migraine headaches by a physician Yes No  
Treatment for epilepsy/seizures Yes No  
History of brain surgery Yes No  
History of meningitis Yes No  
Treatment for substance/alcohol abuse Yes No  
Treatment for psychiatric condition (depression/anxiety) Yes No

#### Diagnosis History

Diagnosed with ADD/ADHD Yes No  
Diagnosed with dyslexia Yes No  
Diagnosed with autism Yes No

Adapted from ImPACT™ demographic section

## Appendix B: SCAT3 Symptom Evaluation (S3SE)

Name: _____	UFID #: _____
Date of Injury: _____	Time of Injury: _____ AM / PM
Date of Exam: _____	Time of exam: _____ AM / PM
EXAM: (circle one)    Baseline    Post-Injury    Sport: _____	

<b>SCAT3 Symptom Evaluation (S3SE)<sup>1</sup></b> <i>Circle appropriate number for each Symptom</i>
---

SYMPTOM	None	Mild	Moderate	Severe			
Headache	0	1	2	3	4	5	6
"Pressure in Head"	0	1	2	3	4	5	6
Neck Pain	0	1	2	3	4	5	6
Nausea or Vomiting	0	1	2	3	4	5	6
Dizziness	0	1	2	3	4	5	6
Blurred Vision	0	1	2	3	4	5	6
Balance 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
Feeling Slowed Down	0	1	2	3	4	5	6
Feeling like "in a fog"	0	1	2	3	4	5	6
"Don't feel right"	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
Fatigue or Low Energy	0	1	2	3	4	5	6
Confusion	0	1	2	3	4	5	6
Drowsiness	0	1	2	3	4	5	6
Trouble Falling Asleep	0	1	2	3	4	5	6
More Emotional	0	1	2	3	4	5	6
Irritability	0	1	2	3	4	5	6
Sadness	0	1	2	3	4	5	6
Nervous or Anxious	0	1	2	3	4	5	6

**Total Number of Symptoms** \_\_\_\_\_ /22

**Symptom Severity Score** \_\_\_\_\_ /132

Do the symptoms get worse with physical activity?      Yes     No

Do the symptoms get worse with mental activity?      Yes     No

How hours did you sleep last night? \_\_\_\_\_ (hrs)

1. McCrory P, Meeuwisse WH, Aubry M, et al. Consensus statement on concussion in sport: the 4th International Conference on Concussion in Sport held in Zurich, November 2012. *Br J Sports Med.* Apr 2013;47(5):250-262

## Appendix C: Standardized Assessment of Concussion (SAC) Form A

Name: \_\_\_\_\_

UF ID: \_\_\_\_\_

Exam: (circle)      Baseline      Post-Injury

Date of Injury: \_\_\_\_\_

Time of Injury: \_\_\_\_\_

Date of Exam: \_\_\_\_\_

Start time: \_\_\_\_\_      End time: \_\_\_\_\_

Examiner: \_\_\_\_\_

### INTRODUCTION

I am going to ask you some questions. Please listen carefully and give your best effort.

### ORIENTATION

What Month is it? \_\_\_\_\_ 0 1

What's the Date today? \_\_\_\_\_ 0 1

What's the Day of the Week? \_\_\_\_\_ 0 1

What year is it? \_\_\_\_\_ 0 1

What Time is it right now? (within 1 hour) \_\_\_\_\_ 0 1

Award 1 point for each correct answer.

<b>ORIENTATION TOTAL SCORE</b>	
--------------------------------	--

### IMMEDIATE MEMORY

I am going to test your memory. I will read you a list of words and when I am done, repeat back as many words as you can remember, in any order.

LIST	TRIAL 1	TRIAL 2	TRIAL 3
Elbow	0 1	0 1	0 1
Apple	0 1	0 1	0 1
Carpet	0 1	0 1	0 1
Saddle	0 1	0 1	0 1
Bubble	0 1	0 1	0 1
<b>TOTAL</b>			

Trials 2 & 3: I am going to repeat that list again. Repeat back as many words as you can remember in any order, even if you said the word before.

Complete all 3 trials regardless of score on trial 1 & 2. 1 pt. for each correct response. Total score equals sum across all 3 trials.

Do not inform the subject that delayed recall will be tested.

<b>IMMEDIATE MEMORY TOTAL SCORE</b>	
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### EXERTIONAL MANEUVERS

If subject is not displaying or reporting symptoms, conduct the following maneuvers to create conditions under which symptoms likely to be elicited and detected. These measures need not be conducted if a subject is already displaying or reporting any symptoms. If not conducted, allow 2 minutes to keep time delay constant before testing Delayed Recall. *These methods should be administered for baseline testing of normal subjects.*

EXERTIONAL MANEUVERS	
5 Jumping Jacks	5 Push-ups
5 Sit-ups	5 Knee Bends

### NEUROLOGIC SCREENING

Loss of Consciousness/Witnessed Unresponsiveness	<input type="checkbox"/> No <input type="checkbox"/> Yes <b>Length:</b>
Post Traumatic Amnesia? Poor recall of events after injury	<input type="checkbox"/> No <input type="checkbox"/> Yes <b>Length:</b>
Retrograde Amnesia? Poor recall of events before injury	<input type="checkbox"/> No <input type="checkbox"/> Yes <b>Length:</b>

	Normal	Abnormal
<b>Strength</b>		
Right Upper Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Left Upper Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Right Lower Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Left Lower Extremity	<input type="checkbox"/>	<input type="checkbox"/>
<b>Sensation- examples:</b>		
Finger-to-nose/Romberg	<input type="checkbox"/>	<input type="checkbox"/>
<b>Coordination- examples:</b>		
Tandem Walk/Finger-Nose-Finger	<input type="checkbox"/>	<input type="checkbox"/>

### CONCENTRATION

Digits Backward: I am going to read you a string of numbers and when I am done, you repeat them back to me backwards, in reverse order of how I read them to you. For example, if I say 7-1-9, you would say 9-1-7.

If correct, go to next string length. If incorrect, read trial 2. 1 pt. possible for each string length. Stop after incorrect on both trials.

4-9-3	6-2-9	0 1
3-8-1-4	3-2-7-9	0 1
6-2-9-7-1	1-5-2-8-6	0 1
7-1-8-4-6-2	5-3-9-1-4-8	0 1

Months in Reverse Order: Now tell me the months of the year in reverse order. Start with the last month and go backward. So you'll say December, November... Go ahead. 1 pt. for entire sequence correct.

Dec-Nov-Oct-Sept-Aug-Jul-Jun-May-Apr-Mar-Feb-Jan	0 1
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<b>CONCENTRATION TOTAL SCORE</b>	
----------------------------------	--

### DELAYED RECALL

Do you remember that list of words I read a few times earlier? Tell me as many words from the list as you can remember in any order. Circle each word correctly recalled. Total score equals number of words recalled.

Elbow      Apple      Carpet      Saddle      Bubble

<b>DELAYED RECALL TOTAL SCORE</b>	
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### SAC SCORING SUMMARY

Exertional Maneuvers & Neurologic Screening are important for examination, but not incorporated into SAC Total Score.

ORIENTATION	/ 5
IMMEDIATE MEMORY	/ 15
CONCENTRATION	/ 5
DELAYED RECALL	/ 5
<b>SAC TOTAL SCORE</b>	<b>/ 30</b>

## Appendix C: Standardized Assessment of Concussion (SAC) Form B

Name: \_\_\_\_\_

UF ID: \_\_\_\_\_

Exam: (circle)      Baseline      Post-Injury

Date of Injury: \_\_\_\_\_

Time of Injury: \_\_\_\_\_

Date of Exam: \_\_\_\_\_

Start time: \_\_\_\_\_ End time: \_\_\_\_\_

Examiner: \_\_\_\_\_

### INTRODUCTION

I am going to ask you some questions.  
Please listen carefully and give your best effort.

### ORIENTATION

What Month is it? \_\_\_\_\_ 0 1  
 What's the Date today? \_\_\_\_\_ 0 1  
 What's the Day of the Week? \_\_\_\_\_ 0 1  
 What year is it? \_\_\_\_\_ 0 1  
 What Time is it right now? (within 1 hour) \_\_\_\_\_ 0 1

Award 1 point for each correct answer.

ORIENTATION TOTAL SCORE	
-------------------------	--

### IMMEDIATE MEMORY

I am going to test your memory. I will read you a list of words and when I am done, repeat back as many words as you can remember, in any order.

LIST	TRIAL 1	TRIAL 2	TRIAL 3
Candle	0 1	0 1	0 1
Paper	0 1	0 1	0 1
Sugar	0 1	0 1	0 1
Sandwich	0 1	0 1	0 1
Wagon	0 1	0 1	0 1
<b>TOTAL</b>			

Trials 2 & 3: I am going to repeat that list again. Repeat back as many words as you can remember in any order, even if you said the word before.

Complete all 3 trials regardless of score on trial 1 & 2. 1 pt. for each correct response. Total score equals sum across all 3 trials.

Do not inform the subject that delayed recall will be tested.

IMMEDIATE MEMORY TOTAL SCORE	
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### EXERTIONAL MANEUVERS

If subject is not displaying or reporting symptoms, conduct the following maneuvers to create conditions under which symptoms likely to be elicited and detected. These measures need not be conducted if a subject is already displaying or reporting any symptoms. If not conducted, allow 2 minutes to keep time delay constant before testing Delayed Recall. *These methods should be administered for baseline testing of normal subjects.*

EXERTIONAL MANEUVERS	
5 Jumping Jacks	5 Push-ups
5 Sit-ups	5 Knee Bends

### NEUROLOGIC SCREENING

Loss of Consciousness/Witnessed Unresponsiveness	<input type="checkbox"/> No <input type="checkbox"/> Yes Length: _____
Post Traumatic Amnesia? Poor recall of events after injury	<input type="checkbox"/> No <input type="checkbox"/> Yes Length: _____
Retrograde Amnesia? Poor recall of events before injury	<input type="checkbox"/> No <input type="checkbox"/> Yes Length: _____

	Normal	Abnormal
<b>Strength</b>		
Right Upper Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Left Upper Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Right Lower Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Left Lower Extremity	<input type="checkbox"/>	<input type="checkbox"/>
<b>Sensation- examples:</b>		
Finger-to-nose/Romberg	<input type="checkbox"/>	<input type="checkbox"/>
<b>Coordination- examples</b>		
Tandem Walk/Finger-Nose-Finger	<input type="checkbox"/>	<input type="checkbox"/>

### CONCENTRATION

Digits Backward: I am going to read you a string of numbers and when I am done, you repeat them back to me backwards, in reverse order of how I read them to you. For example, if I say 7-1-9, you would say 9-1-7.

If correct, go to next string length. If incorrect, read trial 2. 1 pt. possible for each string length. Stop after incorrect on both trials.

5-2-6	4-1-5	0 1
1-7-9-5	4-9-6-8	0 1
4-8-5-2-7	6-1-8-4-3	0 1
8-3-1-9-6-4	7-2-4-8-5-6	1

Months in Reverse Order: Now tell me the months of the year in reverse order. Start with the last month and go backward. So you'll say December, November... Go ahead. 1 pt. for entire sequence correct.

Dec-Nov-Oct-Sept-Aug-Jul-Jun-May-Apr-Mar-Feb-Jan      0 1

CONCENTRATION TOTAL SCORE	
---------------------------	--

### DELAYED RECALL

Do you remember that list of words I read a few times earlier? Tell me as many words from the list as you can remember in any order. Circle each word correctly recalled. Total score equals number or words recalled.

Candle      Paper      Sugar      Sandwich      Wagon

DELAYED RECALL TOTAL SCORE	
----------------------------	--

### SAC SCORING SUMMARY

Exertional Maneuvers & Neurologic Screening are important for examination, but not incorporated into SAC Total Score.

ORIENTATION	/ 5
IMMEDIATE MEMORY	/ 15
CONCENTRATION	/ 5
DELAYED RECALL	/ 5
<b>SAC TOTAL SCORE</b>	<b>/ 30</b>

## Appendix C: Standardized Assessment of Concussion (SAC) Form C

Name: \_\_\_\_\_

UF ID: \_\_\_\_\_

Exam: (circle)      Baseline      Post-Injury

Date of Injury: \_\_\_\_\_

Time of Injury: \_\_\_\_\_

Date of Exam: \_\_\_\_\_

Start time: \_\_\_\_\_ End time: \_\_\_\_\_

Examiner: \_\_\_\_\_

### INTRODUCTION

I am going to ask you some questions.  
Please listen carefully and give your best effort.

### ORIENTATION

What Month is it? \_\_\_\_\_ 0 1  
 What's the Date today? \_\_\_\_\_ 0 1  
 What's the Day of the Week? \_\_\_\_\_ 0 1  
 What year is it? \_\_\_\_\_ 0 1  
 What Time is it right now? (within 1 hour) \_\_\_\_\_ 0 1  
 Award 1 point for each correct answer.

ORIENTATION TOTAL SCORE	
-------------------------	--

### IMMEDIATE MEMORY

I am going to test your memory. I will read you a list of words and when I am done, repeat back as many words as you can remember, in any order.

LIST	TRIAL 1	TRIAL 2	TRIAL 3
Baby	0 1	0 1	0 1
Monkey	0 1	0 1	0 1
Perfume	0 1	0 1	0 1
Sunset	0 1	0 1	0 1
Iron	0 1	0 1	0 1
TOTAL			

**Trials 2 & 3:** I am going to repeat that list again. Repeat back as many words as you can remember in any order, even if you said the word before.

Complete all 3 trials regardless of score on trial 1 & 2. 1 pt. for each correct response. Total score equals sum across all 3 trials.

Do not inform the subject that delayed recall will be tested.

IMMEDIATE MEMORY TOTAL SCORE	
------------------------------	--

### EXERTIONAL MANEUVERS

If subject is not displaying or reporting symptoms, conduct the following maneuvers to create conditions under which symptoms likely to be elicited and detected. These measures need not be conducted if a subject is already displaying or reporting any symptoms. If not conducted, allow 2 minutes to keep time delay constant before testing Delayed Recall. *These methods should be administered for baseline testing of normal subjects.*

EXERTIONAL MANEUVERS	
5 Jumping Jacks	5 Push-ups
5 Sit-ups	5 Knee Bends

### NEUROLOGIC SCREENING

Loss of Consciousness/Witnessed Unresponsiveness	<input type="checkbox"/> No <input type="checkbox"/> Yes Length: _____
Post Traumatic Amnesia? Poor recall of events after injury	<input type="checkbox"/> No <input type="checkbox"/> Yes Length: _____
Retrograde Amnesia? Poor recall of events before injury	<input type="checkbox"/> No <input type="checkbox"/> Yes Length: _____

	Normal	Abnormal
Strength		
Right Upper Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Left Upper Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Right Lower Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Left Lower Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Sensation- examples: Finger-to-nose/Romberg	<input type="checkbox"/>	<input type="checkbox"/>
Coordination- examples: Tandem Walk/Finger-Nose-Finger	<input type="checkbox"/>	<input type="checkbox"/>

### CONCENTRATION

**Digits Backward:** I am going to read you a string of numbers and when I am done, you repeat them back to me backwards, in reverse order of how I read them to you. For example, if I say 7-1-9, you would say 9-1-7.

If correct, go to next string length. If incorrect, read trial 2. 1 pt. possible for each string length. Stop after incorrect on both trials.

1-4-2	6-5-8	0 1
6-8-3-1	3-4-8-1	0 1
4-9-1-5-3	6-8-2-5-1	0 1
3-7-6-5-1-9	9-2-6-5-1-4	0 1

**Months in Reverse Order:** Now tell me the months of the year in reverse order. Start with the last month and go backward. So you'll say December, November... Go ahead. 1 pt. for entire sequence correct.

Dec-Nov-Oct-Sept-Aug-Jul-Jun-May-Apr-Mar-Feb-Jan 0 1

CONCENTRATION TOTAL SCORE	
---------------------------	--

### DELAYED RECALL

Do you remember that list of words I read a few times earlier? Tell me as many words from the list as you can remember in any order. Circle each word correctly recalled. Total score equals number or words recalled.

Baby      Monkey      Perfume      Sunset      Iron

DELAYED RECALL TOTAL SCORE	
----------------------------	--

### SAC SCORING SUMMARY

Exertional Maneuvers & Neurologic Screening are important for examination, but not incorporated into SAC Total Score.

ORIENTATION	/ 5
IMMEDIATE MEMORY	/ 15
CONCENTRATION	/ 5
DELAYED RECALL	/ 5
<b>SAC TOTAL SCORE</b>	<b>/ 30</b>

## Appendix C: Standardized Assessment of Concussion (SAC) Form D

Name: \_\_\_\_\_

UF ID: \_\_\_\_\_

Exam: (circle)      Baseline      Post-Injury

Date of Injury: \_\_\_\_\_

Time: \_\_\_\_\_

Date of Exam: \_\_\_\_\_

Start Time: \_\_\_\_\_ End Time: \_\_\_\_\_

Examiner: \_\_\_\_\_

### INTRODUCTION

I am going to ask you some questions.  
Please listen carefully and give your best effort.

### ORIENTATION

What Month is it? \_\_\_\_\_ 0 1  
 What's the Date today? \_\_\_\_\_ 0 1  
 What's the Day of the Week? \_\_\_\_\_ 0 1  
 What year is it? \_\_\_\_\_ 0 1  
 What Time is it right now? (within 1 hour) \_\_\_\_\_ 0 1

Award 1 point for each correct answer.

ORIENTATION TOTAL SCORE	
-------------------------	--

### IMMEDIATE MEMORY

I am going to test your memory. I will read you a list of words and when I am done, repeat back as many words as you can remember, in any order.

LIST	TRIAL 1	TRIAL 2	TRIAL 3
Finger	0 1	0 1	0 1
Penny	0 1	0 1	0 1
Blanket	0 1	0 1	0 1
Lemon	0 1	0 1	0 1
Insect	0 1	0 1	0 1
TOTAL			

Trials 2 & 3: I am going to repeat that list again. Repeat back as many words as you can remember in any order, even if you said the word before.

Complete all 3 trials regardless of score on trial 1 & 2. 1 pt. for each correct response. Total score equals sum across all 3 trials.

Do not inform the subject that delayed recall will be tested.

IMMEDIATE MEMORY TOTAL SCORE	
------------------------------	--

### EXERTIONAL MANEUVERS

If subject is not displaying or reporting symptoms, conduct the following maneuvers to create conditions under which symptoms likely to be elicited and detected. These measures need not be conducted if a subject is already displaying or reporting any symptoms. If not conducted, allow 2 minutes to keep time delay constant before testing Delayed Recall. *These methods should be administered for baseline testing of normal subjects.*

EXERTIONAL MANEUVERS	
5 Jumping Jacks	5 Push-ups
5 Sit-ups	5 Knee Bends

### NEUROLOGIC SCREENING

Loss of Consciousness/Witnessed Unresponsiveness	<input type="checkbox"/> No <input type="checkbox"/> Yes Length: _____
Post Traumatic Amnesia? Poor recall of events after injury	<input type="checkbox"/> No <input type="checkbox"/> Yes Length: _____
Retrograde Amnesia? Poor recall of events before injury	<input type="checkbox"/> No <input type="checkbox"/> Yes Length: _____

Normal    Abnormal

Strength		
Right Upper Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Left Upper Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Right Lower Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Left Lower Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Sensation- examples: Finger-to-nose/Romberg	<input type="checkbox"/>	<input type="checkbox"/>
Coordination- examples Tandem Walk/Finger-Nose-Finger	<input type="checkbox"/>	<input type="checkbox"/>

### CONCENTRATION

Digits Backward: I am going to read you a string of numbers and when I am done, you repeat them back to me backwards, in reverse order of how I read them to you. For example, if I say 7-1-9, you would say 9-1-7.

If correct, go to next string length. If incorrect, read trial 2. 1 pt. possible for each string length. Stop after incorrect on both trials.

7-8-2	9-2-6	0 1
4-1-8-3	9-7-2-3	0 1
1-7-9-2-6	4-1-7-5-2	0 1
2-6-4-8-1-7	8-4-1-9-3-5	0 1

Months in Reverse Order: Now tell me the months of the year in reverse order. Start with the last month and go backward. So you'll say December, November... Go ahead. 1 pt. for entire sequence correct.

Dec-Nov-Oct-Sept-Aug-Jul-Jun-May-Apr-Mar-Feb-Jan 0 1

CONCENTRATION TOTAL SCORE	
---------------------------	--

### DELAYED RECALL

Do you remember that list of words I read a few times earlier? Tell me as many words from the list as you can remember in any order. Circle each word correctly recalled. Total score equals number or words recalled.

Finger      Penny      Blanket      Lemon      Insect

DELAYED RECALL TOTAL SCORE	
----------------------------	--

### SAC SCORING SUMMARY

Exertional Maneuvers & Neurologic Screening are important for examination, but not incorporated into SAC Total Score.

ORIENTATION	/ 5
IMMEDIATE MEMORY	/ 15
CONCENTRATION	/ 5
DELAYED RECALL	/ 5
<b>SAC TOTAL SCORE</b>	<b>/ 30</b>



## Appendix C: Standardized Assessment of Concussion (SAC) Form E

Name: \_\_\_\_\_

UF ID: \_\_\_\_\_

Exam: (circle)      Baseline      Post-Injury

Date of Injury: \_\_\_\_\_

Time: \_\_\_\_\_

Date of Exam: \_\_\_\_\_

Start Time: \_\_\_\_\_ End Time: \_\_\_\_\_

Examiner: \_\_\_\_\_

### INTRODUCTION

I am going to ask you some questions.  
Please listen carefully and give your best effort.

### ORIENTATION

What Month is it? \_\_\_\_\_ 0 1  
 What's the Date today? \_\_\_\_\_ 0 1  
 What's the Day of the Week? \_\_\_\_\_ 0 1  
 What year is it? \_\_\_\_\_ 0 1  
 What Time is it right now? (within 1 hour) \_\_\_\_\_ 0 1

Award 1 point for each correct answer.

ORIENTATION TOTAL SCORE	
-------------------------	--

### IMMEDIATE MEMORY

I am going to test your memory. I will read you a list of words and when I am done, repeat back as many words as you can remember, in any order.

LIST	TRIAL 1	TRIAL 2	TRIAL 3
Jacket	0 1	0 1	0 1
Arrow	0 1	0 1	0 1
Pepper	0 1	0 1	0 1
Cotton	0 1	0 1	0 1
Movie	0 1	0 1	0 1
TOTAL			

Trials 2 & 3: I am going to repeat that list again. Repeat back as many words as you can remember in any order, even if you said the word before.

Complete all 3 trials regardless of score on trial 1 & 2. 1 pt. for each correct response. Total score equals sum across all 3 trials.

Do not inform the subject that delayed recall will be tested.

IMMEDIATE MEMORY TOTAL SCORE	
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### EXERTIONAL MANEUVERS

If subject is not displaying or reporting symptoms, conduct the following maneuvers to create conditions under which symptoms likely to be elicited and detected. These measures need not be conducted if a subject is already displaying or reporting any symptoms. If not conducted, allow 2 minutes to keep time delay constant before testing Delayed Recall. *These methods should be administered for baseline testing of normal subjects.*

EXERTIONAL MANEUVERS	
5 Jumping Jacks	5 Push-ups
5 Sit-ups	5 Knee Bends

### NEUROLOGIC SCREENING

Loss of Consciousness/Witnessed Unresponsiveness	<input type="checkbox"/> No <input type="checkbox"/> Yes Length: _____
Post Traumatic Amnesia? Poor recall of events after injury	<input type="checkbox"/> No <input type="checkbox"/> Yes Length: _____
Retrograde Amnesia? Poor recall of events before injury	<input type="checkbox"/> No <input type="checkbox"/> Yes Length: _____

Normal    Abnormal

Strength		
Right Upper Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Left Upper Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Right Lower Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Left Lower Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Sensation- examples: Finger-to-nose/Romberg	<input type="checkbox"/>	<input type="checkbox"/>
Coordination- examples Tandem Walk/Finger-Nose-Finger	<input type="checkbox"/>	<input type="checkbox"/>

### CONCENTRATION

Digits Backward: I am going to read you a string of numbers and when I am done, you repeat them back to me backwards, in reverse order of how I read them to you. For example, if I say 7-1-9, you would say 9-1-7.

If correct, go to next string length. If incorrect, read trial 2. 1 pt. possible for each string length. Stop after incorrect on both trials.

3-8-2	5-1-8	0 1
2-7-9-3	2-1-6-9	0 1
4-1-8-6-9	9-4-1-7-5	0 1
6-9-7-3-8-2	4-2-7-9-3-8	0 1

Months in Reverse Order: Now tell me the months of the year in reverse order. Start with the last month and go backward. So you'll say December, November... Go ahead. 1 pt. for entire sequence correct.

Dec-Nov-Oct-Sept-Aug-Jul-Jun-May-Apr-Mar-Feb-Jan 0 1

CONCENTRATION TOTAL SCORE	
---------------------------	--

### DELAYED RECALL

Do you remember that list of words I read a few times earlier? Tell me as many words from the list as you can remember in any order. Circle each word correctly recalled. Total score equals number or words recalled.

Jacket      Arrow      Pepper      Cotton      Movie

DELAYED RECALL TOTAL SCORE	
----------------------------	--

### SAC SCORING SUMMARY

Exertional Maneuvers & Neurologic Screening are important for examination, but not incorporated into SAC Total Score.

ORIENTATION	/ 5
IMMEDIATE MEMORY	/ 15
CONCENTRATION	/ 5
DELAYED RECALL	/ 5
<b>SAC TOTAL SCORE</b>	<b>/ 30</b>

## Appendix C: Standardized Assessment of Concussion (SAC) Form F

Name: \_\_\_\_\_

UF ID: \_\_\_\_\_

Exam: (circle)      Baseline      Post-Injury

Date of Injury: \_\_\_\_\_

Time: \_\_\_\_\_

Date of Exam: \_\_\_\_\_

Start Time: \_\_\_\_\_ End Time: \_\_\_\_\_

Examiner: \_\_\_\_\_

### INTRODUCTION

I am going to ask you some questions.  
Please listen carefully and give your best effort.

### ORIENTATION

What Month is it? \_\_\_\_\_ 0 1  
 What's the Date today? \_\_\_\_\_ 0 1  
 What's the Day of the Week? \_\_\_\_\_ 0 1  
 What year is it? \_\_\_\_\_ 0 1  
 What Time is it right now? (within 1 hour) \_\_\_\_\_ 0 1

Award 1 point for each correct answer.

ORIENTATION TOTAL SCORE	
-------------------------	--

### IMMEDIATE MEMORY

I am going to test your memory. I will read you a list of words and when I am done, repeat back as many words as you can remember, in any order.

LIST	TRIAL 1	TRIAL 2	TRIAL 3
Dollar	0 1	0 1	0 1
Honey	0 1	0 1	0 1
Mirror	0 1	0 1	0 1
Saddle	0 1	0 1	0 1
Anchor	0 1	0 1	0 1
TOTAL			

Trials 2 & 3: I am going to repeat that list again. Repeat back as many words as you can remember in any order, even if you said the word before.

Complete all 3 trials regardless of score on trial 1 & 2. 1 pt. for each correct response. Total score equals sum across all 3 trials.

Do not inform the subject that delayed recall will be tested.

IMMEDIATE MEMORY TOTAL SCORE	
------------------------------	--

### EXERTIONAL MANEUVERS

If subject is not displaying or reporting symptoms, conduct the following maneuvers to create conditions under which symptoms likely to be elicited and detected. These measures need not be conducted if a subject is already displaying or reporting any symptoms. If not conducted, allow 2 minutes to keep time delay constant before testing Delayed Recall. *These methods should be administered for baseline testing of normal subjects.*

EXERTIONAL MANEUVERS	
5 Jumping Jacks	5 Push-ups
5 Sit-ups	5 Knee Bends

### NEUROLOGIC SCREENING

Loss of Consciousness/Witnessed Unresponsiveness	<input type="checkbox"/> No <input type="checkbox"/> Yes Length: _____
Post Traumatic Amnesia? Poor recall of events after injury	<input type="checkbox"/> No <input type="checkbox"/> Yes Length: _____
Retrograde Amnesia? Poor recall of events before injury	<input type="checkbox"/> No <input type="checkbox"/> Yes Length: _____

Normal    Abnormal

Strength	Normal	Abnormal
Right Upper Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Left Upper Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Right Lower Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Left Lower Extremity	<input type="checkbox"/>	<input type="checkbox"/>
Sensation- examples: Finger-to-nose/Romberg	<input type="checkbox"/>	<input type="checkbox"/>
Coordination- examples: Tandem Walk/Finger-Nose-Finger	<input type="checkbox"/>	<input type="checkbox"/>

### CONCENTRATION

Digits Backward: I am going to read you a string of numbers and when I am done, you repeat them back to me backwards, in reverse order of how I read them to you. For example, if I say 7-1-9, you would say 9-1-7.

If correct, go to next string length. If incorrect, read trial 2. 1 pt. possible for each string length. Stop after incorrect on both trials.

2-7-1	4-7-9	0 1
1-6-8-3	3-9-2-4	0 1
2-4-7-5-8	8-3-9-6-4	0 1
5-8-6-2-4-9	3-1-7-8-2-6	0 1

Months in Reverse Order: Now tell me the months of the year in reverse order. Start with the last month and go backward. So you'll say December, November... Go ahead. 1 pt. for entire sequence correct.

Dec-Nov-Oct-Sept-Aug-Jul-Jun-May-Apr-Mar-Feb-Jan 0 1

CONCENTRATION TOTAL SCORE	
---------------------------	--

### DELAYED RECALL

Do you remember that list of words I read a few times earlier? Tell me as many words from the list as you can remember in any order. Circle each word correctly recalled. Total score equals number or words recalled.

Dollar      Honey      Mirror      Saddle      Anchor

DELAYED RECALL TOTAL SCORE	
----------------------------	--

### SAC SCORING SUMMARY

Exertional Maneuvers & Neurologic Screening are important for examination, but not incorporated into SAC Total Score.

ORIENTATION	/ 5
IMMEDIATE MEMORY	/ 15
CONCENTRATION	/ 5
DELAYED RECALL	/ 5
<b>SAC TOTAL SCORE</b>	<b>/ 30</b>

## Appendix D: Balance Error Scoring System (BESS)

Name: _____	UFID #: _____
Date of Injury: _____	Time of Injury: _____ AM / PM
Date of Exam: _____	Time of exam: _____ AM / PM
EXAM: (circle one)    Baseline    Post-Injury	Sport: _____
Examiner: _____	

### Balance Error Scoring System (BESS)<sup>1</sup>

**Balance Error Scoring System – Types of Errors**

1. Hands lifted off iliac crest
2. Opening eyes
3. Step, stumble, or fall
4. Moving hip into >30 abduction, adduction, flexion or extension
5. Lifting forefoot or heel
6. Remaining out of testing position > 5 sec.

- **NO SHOES. Barefoot or in socks**
- **20 seconds at each position**
- **Each type of error can be counted more than once in each position**
- **Simultaneous errors count as 1 error**
- **10 points maximum score in each position**
- **If <5 consecutive seconds of stability per stance then give max score of 10**
- **Total possible score of 60**

<b>SCORE CARD:</b> (# of errors)	<b>Firm Surface</b>	<b>Foam Surface</b>
Double Leg Stance (narrow stance- feet together)		
Single Leg Stance (non-dominant foot)		
Tandem Stance (non-dominant foot in back)		
Sub Scores:		



**Total Score:**

Which **foot** was used for testing (i.e. non-dominant foot):  **Left**  **Right**

<sup>1</sup>Guskiewicz KM, Perrin DH, Gansneder BM. Effect of mild head injury on postural stability in athletes. *J Athl Train.* 1996 Oct;31(4):300-6.

**Appendix E: Brief Symptom Inventory-18 (BSI-18)**

Name: _____	UFID #: _____
Date of Injury: _____	Time of Injury: _____ AM / PM
Date of Exam: _____	Time of exam: _____ AM / PM
EXAM: ( <i>circle one</i> )    Baseline    Post-Injury	Sport: _____
Examiner: _____	

**BSI - 18**

**DIRECTIONS:** Below is a list of problems people sometimes have. Read each one carefully and circle the number that best describes HOW MUCH THAT PROBLEM HAS DISTRESSED OR BOTHERED YOU DURING THE PAST 7 DAYS INCLUDING TODAY. Do not skip any items. If you change your mind, erase your first mark carefully and then fill in your new choice.

HOW MUCH WERE YOU DISTRESSED BY:	NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY
1. Faintness or Dizziness	0	1	2	3	4
2. Feeling no interest in things	0	1	2	3	4
3. Nervousness or shakiness inside	0	1	2	3	4
4. Pains in the heart or chest	0	1	2	3	4
5. Feeling lonely	0	1	2	3	4
6. Feeling tense or keyed up	0	1	2	3	4
7. Nausea or upset stomach	0	1	2	3	4
8. Feeling blue	0	1	2	3	4
9. Suddenly scared for no reason	0	1	2	3	4
10. Trouble getting your breath	0	1	2	3	4
11. Feeling of worthlessness	0	1	2	3	4
12. Spells of terror or panic	0	1	2	3	4
13. Numbness or tingling in parts of your body	0	1	2	3	4
14. Feeling hopelessness about the future	0	1	2	3	4
15. Feeling so restless you can't sit still	0	1	2	3	4
16. Feeling weak in parts of your body	0	1	2	3	4
17. Thoughts of ending your life	0	1	2	3	4
18. Feeling fearful	0	1	2	3	4

<p><b>Total Number of Symptoms:</b> _____ (maximum possible 18)</p> <p><b>Symptom Severity Score:</b> _____ (maximum possible 72)</p>
---

**Appendix F: King-Devick Test (KDT)**

Name: _____	UFID #: _____
Date of Injury: _____	Time of Injury: _____ AM / PM
Date of Exam: _____	Time of exam: _____ AM / PM
Examiner: _____	Sport: _____

Testing Time Point: <input type="checkbox"/> Baseline <input type="checkbox"/> 0-6 Hours <input type="checkbox"/> 24-48 Hours <input type="checkbox"/> Daily Eval <input type="checkbox"/> Stage 1 <input type="checkbox"/> Stage 5 <input type="checkbox"/> 6 month
--

**Examiner:** Please place a number next to the following tests to indicate the order of performance ("1" indicating the first test performed, "2" indicating the second test performed and so forth). If not performed, leave blank.

	Start Time	End Time
_____ S3SE	_____	_____
_____ BSI-18	_____	_____
_____ SAC	_____	_____
_____ BESS	_____	_____
_____ KDT	_____	_____
_____ ImPACT™	_____	_____
_____ Other: _____		

<b>King-Devick Test</b>		
Baseline	Time	Errors
Trial 1		
Trial 2		
Trial 3		

<b>Post-Injury</b>	
Time:	Errors:

## Appendix G: Concussion Testing Summary

Name: \_\_\_\_\_ Sport: \_\_\_\_\_

Student ID#: \_\_\_\_\_ Current Concussion Date: \_\_\_\_\_ Time: \_\_\_\_\_

Dates of prior concussions: \_\_\_\_\_

	Baseline	Date/Time 0-6hrs	Date/Time	Date/Time 24-48hrs	Date/Time	Date/Time Stage 1	Date/Time	Date/Time Asymptomatic	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time Stage 5	Date/Time	Date/Time	Date/Time 6 months
S3SE																
BSI-18																
SAC																
BESS																
KDT																
ImPACT™																
<i>additional test</i>																
<i>additional test</i>																
Return-to-Play Protocol Stage																

Date/Time returned to full contact practice (Stage 5): \_\_\_\_\_

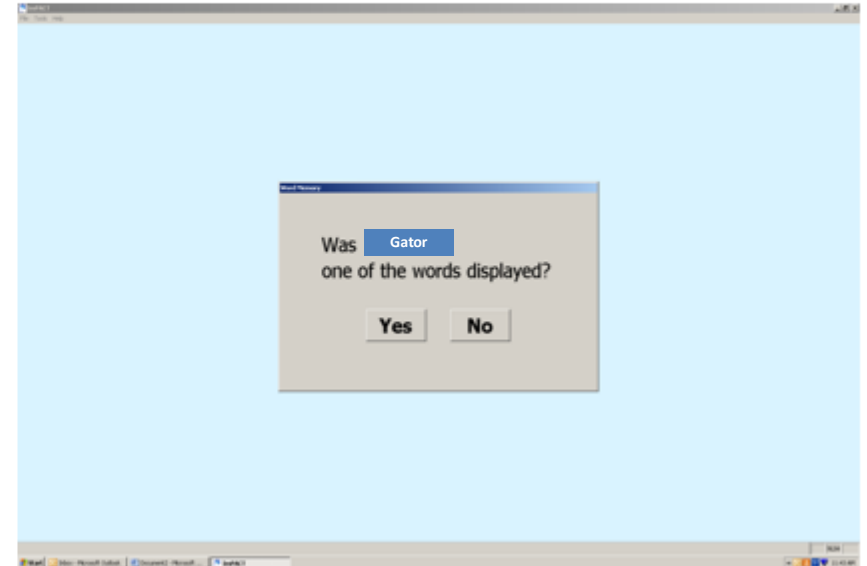
Date/Time returned to competition (Stage 6): \_\_\_\_\_

## Appendix H: UF Concussion Return to Play Protocol (UFCRTPP)

Rehabilitation Stage	Description	Autonomic Recovery <sup>+</sup>	Vestibular/Ocular Recovery
1. Minimal activity	Limit concentration activities including class and meetings. Exercise in quiet area, no impact activities (running, jumping). Balance and vestibular treatment by specialist (prn). Limit head movement/position change.	30-40% max exertion. HR ≈ 100-115.	Stationary aerobic conditioning; bike. Static balance activities. Exercises that limit head movements (weight machines, squats/lunges with focusing). Core exercises without head movements.
2. Light activity	May attend class and meetings. May exercise in gym areas. Use various exercise equipment. Allow some positional changes and head movement.	40-60% max exertion. HR ≈ 115-145.	More progressive dynamic aerobic conditioning: elliptical, treadmill walking, progress to treadmill jogging. Balance activities with head movements. Resistance exercises with head movements (example: lateral squats with head movement). Low intensity sport specific activities. Core exercises with head movements (ex: side planks with arm /head turn, bicycles, Russian twists).
3. Moderate activity	Any environment ok for exercise (indoor, outdoor). Integrate strength, conditioning, and balance/proprioceptive exercise. Can incorporate concentration challenges (counting exercises, visual games).	60-80% max exertion. HR ≈ 145-170.	Moderately aggressive aerobic exercise (intervals, pyramids, stair running). All forms of strength exercises. Dynamic warm-ups. Impact activities (running, plyometrics). Challenging positional changes (burpees, mountain climbers).
4. Non-contact sport-specific activity	Continue to avoid contact activity, but resume aggressive training in normal sport environment.	80-100% max exertion. HR ≈ 170-200.	Sport-specific activities avoiding contact.
5. Full contact practice	Must be back to baseline in all testing. Initiate contact activities as appropriate to sport. Full exertion.	100% max exertion. HR ≈ 200.	Full physical training activities with contact.
6. Return to play	Normal game play.		

<sup>+</sup> % Max Exertion calculated by formula  $\{[(\text{Max HR} - \text{Rest HR}) \times \%] + \text{Rest HR}\}$  with assumption that UF athlete is 20 years old, Max HR = (220 - age), and Rest HR = 60.

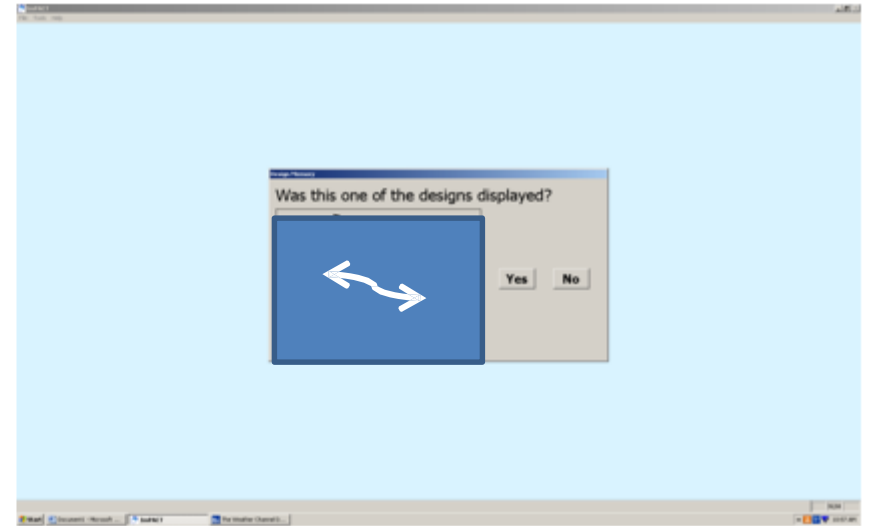
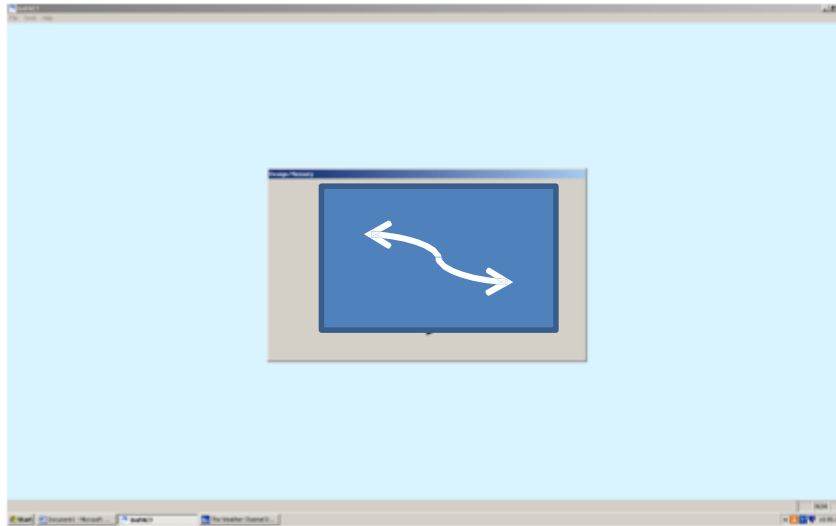
# Word Memory Test



1. You will be asked to study and try to memorize a list of words. The list will be shown to you twice.
2. Then a word will be presented to you and you will respond by clicking “Yes” if the word was from the list you were told to memorize. Click “No” if the word was not from the original list.
3. Ex) If the word “Gator” was on the list you were asked to memorize, you would click “Yes.” If “Gator” was not on the original list, you would select “No.”

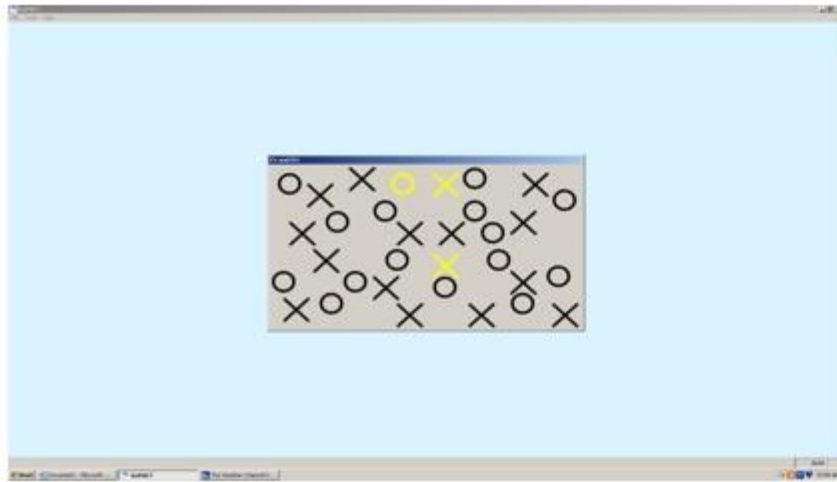


# Design Memory Test

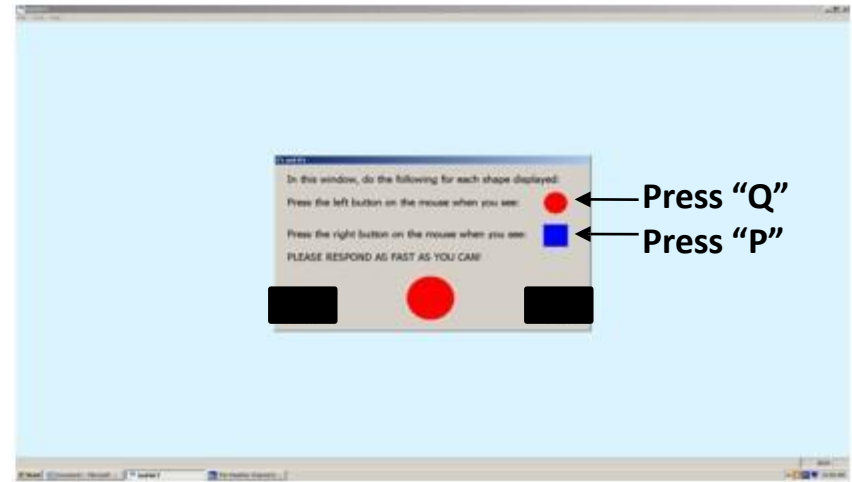


1. You will be asked to study and try to memorize a set of designs. The designs will be shown to you twice.
2. Then a design will be presented to you and you will respond by clicking “Yes” if the design was from the set you were told to memorize. Click “No” if the design was not from the original list.
3. Ex) If the design on the left was part of the original set you were asked to memorize, you would click “Yes.” If it was not from the original set, you would click “No.”

# X's and O's



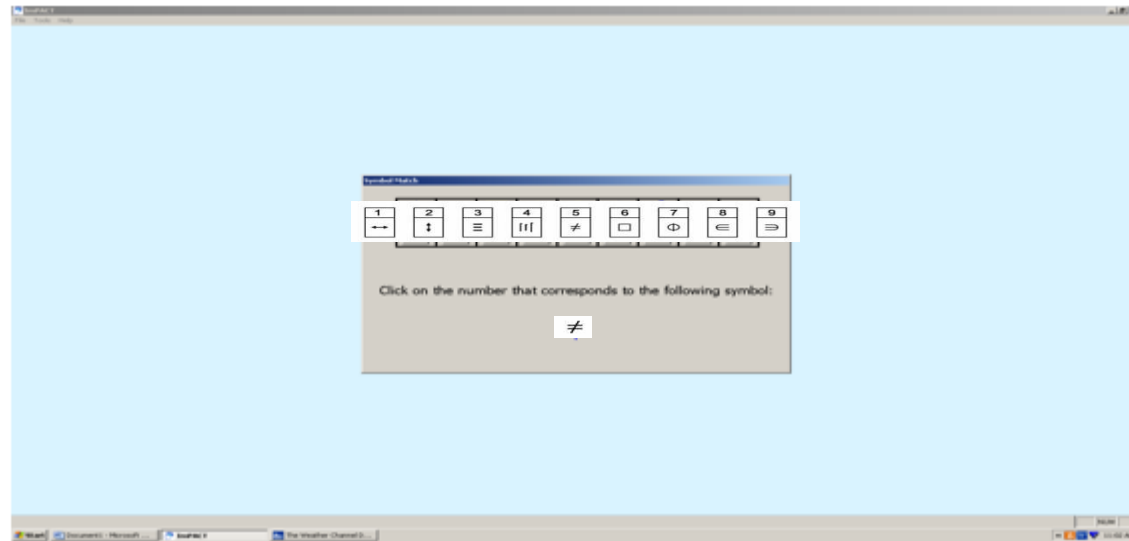
**X's and O's**



**Circle & Square match**

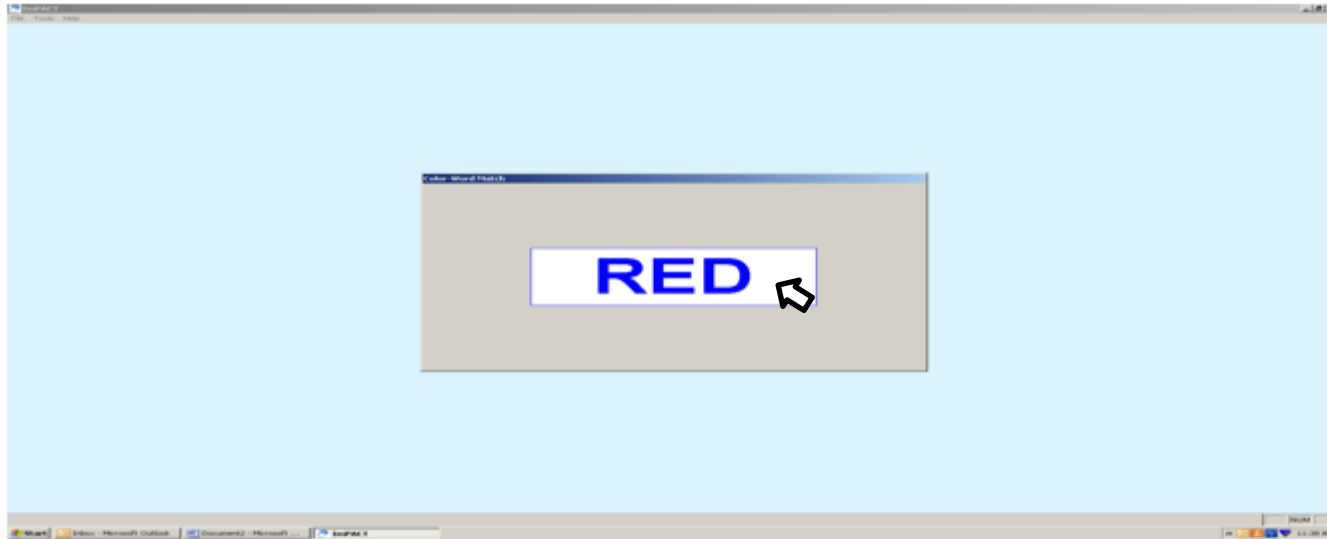
1. A random assortment of X's and O's is displayed, and three of the X's or O's are illuminated in YELLOW. You have to try and remember the location of the YELLOW X's and O's.
2. A shape identification test is then presented. You must press "Q" when you see a red circle, and press "P" when you see a blue square. RESPOND AS QUICKLY AS POSSIBLE.
3. After the shape identification test, the X's and O's screen reappears and you have to remember where the yellow X's and O's were located.

# Symbol Matching



1. You will be asked to click the number that matches the symbol shown at the bottom AS QUICKLY AS POSSIBLE. You must also try and remember which symbol goes with which number.
2. Ex) for the “ $\neq$ ” symbol, you would click on the number 5.
3. After a while, the symbols will disappear from the top row and you will be asked to click the number that goes with the presented symbol from memory.

# Color Match Test



1. A word of a color will be displayed on the screen. The word will either be displayed in the same color ink as the word, or a different color.
2. You must **CLICK WITHIN THE BOX** on the screen whenever the word presented matches the color of the ink. **DO NOTHING** if the word and color of the ink do not match.
3. Ex) If the word "RED" is presented in RED ink, click **AS QUICKLY AS POSSIBLE** within the box. If the word "RED" is presented in BLUE ink (as shown above), **DO NOTHING**.

# Three Letters



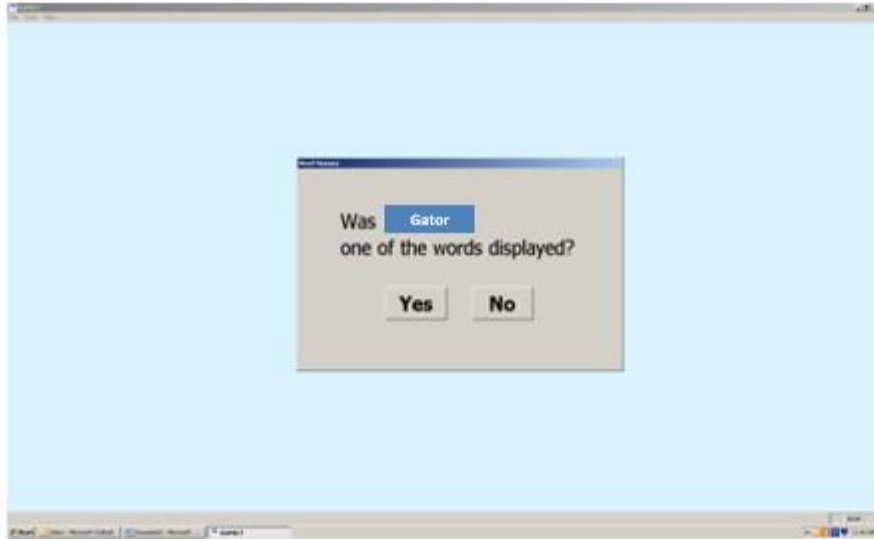
**3 Letters Test**



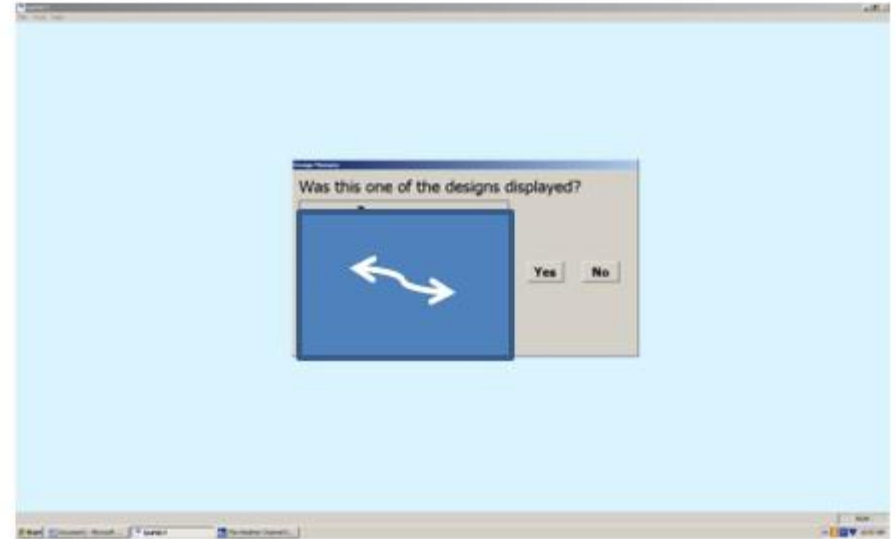
**Counting backward**

1. You will first be asked to click AS QUICKLY AS POSSIBLE the numbered buttons on the screen, starting with #25 and counting backwards to #1.
2. Then you will be shown three letters that you will have to try and memorize.
3. After seeing the three letters, the numbered grid will reappear and you will repeat the counting backwards test, clicking as quickly as possible from #25 backwards to #1.
4. You will then be asked to recall the three letters shown to you before the counting test

# Word & Design Memory



**Delayed Word Recall**



**Delayed Design Recall**

1. You are asked to recall the words and designs that you were told to memorize at the beginning of the test.

**Appendix J: Concussion Take Home Instructions**

**Concussion Take Home Instructions**

*University of Florida Athletic Association*

You have symptoms consistent with a possible concussion. A careful medical examination has been performed and no serious complications have been found. It is recommended that you have short term monitoring by a responsible adult/teammate while you are away from the athletic training facility in case new or worsening symptoms occur.

Listed below are instructions and important points to follow while at home:

<b>Signs to watch for:</b>	
- Changes in behavior	- Dizziness
- Worsening headache	- Numbness and tingling anywhere in the body
- Vomiting	- Excessive drowsiness
- Double vision	- Slurred speech

<b>Things to AVOID:</b>	
- Drinking alcohol	- Taking certain medications:
- Driving a car, scooter, or any motorized vehicle	o Aspirin, Aleve, Ibuprofen or other anti-inflammatories (i.e. Celebrex)
- Doing strenuous activities	o Sedating pain killers
- Crowds	- Video games, loud music, TV/movies

<b>Things that are “OK” or that you should do:</b>	
- REST	- Take Tylenol (Acetaminophen) as directed
- Apply ice to injured areas	- Drink plenty of fluids (Gatorade and water)
- Contact team Dietitian	

If any of the above “signs to watch for” or any other problems occur, or if you have any questions please contact your athletic trainer and/or go to the Emergency Department immediately.

Additional comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Athlete’s Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Athletic Trainer: \_\_\_\_\_

Date: \_\_\_\_\_

(AT’s Signature): \_\_\_\_\_

Phone #s: \_\_\_\_\_

## Appendix K: NCAA Concussion Fact Sheet for Coaches



### What is a concussion?

A concussion is a type of traumatic brain injury. It follows a force to the head or body and leads to a change in brain function. It is not typically accompanied by loss of consciousness.

### How can I tell if an athlete has a concussion?

*You may notice the athlete ...*

- Appears dazed or stunned
- Forgets an instruction
- Is confused about an assignment or position
- Is unsure of the game, score or opponent
- Appears less coordinated
- Answers questions slowly
- Loses consciousness

*Note that no two concussions are the same. All possible concussions must be evaluated by an athletic trainer or team physician.*

*The athlete may tell you he or she is experiencing ...*

- A headache, head pressure or that he or she doesn't feel right following a blow to the head
- Nausea
- Balance problems or dizziness
- Double or blurry vision
- Sensitivity to light or noise
- Feeling sluggish, hazy or foggy
- Confusion, concentration or memory problems

### What can I do to keep student-athletes safe?

	Preseason	In-Season	Time of Injury	Recovery
What can I do?	Create a culture in which concussion reporting is encouraged and promoted.	Know the signs and symptoms of concussions.	Remove athletes from play immediately if you think they have a concussion and refer them to the team physician or athletic trainer.	Follow the recovery and return-to-play protocol established by team physicians and athletic trainers.
Why does it matter?	Athletes who don't immediately seek care for a suspected concussion take longer to recover.	The more people who know what to look for in a concussed athlete, the more likely a concussion will be identified.	Early removal from play can mean a quicker recovery and help avoid serious consequences.	Team physicians and athletic trainers have the training to follow best practices related to the concussion recovery process.
Tips and strategies	Be present when your team physician or athletic trainer provides concussion education material to your team. Tell your team that this matters to you.	Check in with your team physician or athletic trainer if you want to learn more about concussion safety.	Provide positive reinforcement when an athlete reports a suspected concussion.	Tell athletes that decisions related to their return to play and health are entirely in the hands of the team physician and athletic trainer.

*You play a powerful role in setting the tone for concussion safety on your team. Let your team know that you take concussion seriously and reporting the symptoms of a suspected concussion is an important part of your team's values.*



### What happens if an athlete gets a concussion and keeps practicing or competing?

- Due to brain vulnerability after a concussion, an athlete may be more likely to suffer another concussion while symptomatic from the first one.
- In rare cases, repeat head trauma can result in brain swelling, permanent brain damage or even death.
- Continuing to play after a concussion increases the chance of sustaining other injuries too, not just concussion.
- Athletes with a concussion have reduced concentration and slowed reaction time. This means they won't be performing at their best.
- Athletes who delay reporting concussion may take longer to recover fully.

### What are the long-term effects of a concussion?

- We don't fully understand the long-term effects of a concussion, but ongoing studies raise concerns.
- Athletes who have had multiple concussions *may* have an increased risk of degenerative brain disease, and cognitive and emotional difficulties later in life.

### What do I need to know about repetitive head impacts?

- Repetitive head impacts mean that an individual has been exposed to repeated impact forces to the head. These forces may or may not meet the threshold of a concussion.
- Research is ongoing but emerging data suggest that repetitive head impact also may be harmful and place a student-athlete at an increased risk of neurological complications later in life.

### Did you know?

- Most contact or collision teams have at least one student-athlete diagnosed with a concussion every season.
- Your school has a concussion management plan, and team physicians and athletic trainers are expected to follow that plan during a student-athlete's recovery.
- NCAA rules require that team physicians and athletic trainers have the unchallengeable authority to make all medical management and return-to-play decisions for student-athletes.
- We're learning more about concussion every day. To find out more about the largest concussion study ever conducted, which is being led by the NCAA and U.S. Department of Defense, visit [ncaa.org/concussion](http://ncaa.org/concussion).



For more information, visit [ncaa.org/concussion](http://ncaa.org/concussion).

NCAA is a trademark of the National Collegiate Athletic Association.





## Appendix M: NCAA Concussion Fact Sheet for Student-Athletes



### What is a concussion?

A concussion is a type of traumatic brain injury. It follows a force to the head or body and leads to a change in brain function. It is not typically accompanied by loss of consciousness.

#### How can I keep myself safe?

##### 1. Know the symptoms.

*You may experience ...*

- Headache or head pressure
- Nausea
- Balance problems or dizziness
- Double or blurry vision
- Sensitivity to light or noise
- Feeling sluggish, hazy or foggy
- Confusion, concentration or memory problems

##### 2. Speak up.

- If you think you have a concussion, stop playing and talk to your coach, athletic trainer or team physician immediately.

##### 3. Take time to recover.

- Follow your team physician and athletic trainer's directions during concussion recovery. If left unmanaged, there may be serious consequences.
- Once you've recovered from a concussion, talk with your physician about the risks and benefits of continuing to participate in your sport.

#### How can I be a good teammate?

##### 1. Know the symptoms.

*You may notice that a teammate ...*

- Appears dazed or stunned
- Forgets an instruction
- Is confused about an assignment or position
- Is unsure of the game, score or opponent
- Appears less coordinated
- Answers questions slowly
- Loses consciousness

##### 2. Encourage teammates to be safe.

- If you think one of your teammates has a concussion, tell your coach, athletic trainer or team physician immediately.
- Help create a culture of safety by encouraging your teammates to report any concussion symptoms.

##### 3. Support your injured teammates.

- If one of your teammates has a concussion, let him or her know you and the team support playing it safe and following medical advice during recovery.
- Being unable to practice or join team activities can be isolating. Make sure your teammates know they're not alone.

*No two concussions are the same. New symptoms can appear hours or days after the initial impact. If you are unsure if you have a concussion, talk to your athletic trainer or team physician immediately.*

### What happens if I get a concussion and keep practicing or competing?

- Due to brain vulnerability after a concussion, an athlete may be more likely to suffer another concussion while symptomatic from the first one.
- In rare cases, repeat head trauma can result in brain swelling, permanent brain damage or even death.
- Continuing to play after a concussion increases the chance of sustaining other injuries too, not just concussion.
- Athletes with concussion have reduced concentration and slowed reaction time. This means that you won't be performing at your best.
- Athletes who delay reporting concussion take longer to recover fully.

### What are the long-term effects of a concussion?

- We don't fully understand the long-term effects of a concussion, but ongoing studies raise concerns.
- Athletes who have had multiple concussions *may* have an increased risk of degenerative brain disease and cognitive and emotional difficulties later in life.

### What do I need to know about repetitive head impacts?

- Repetitive head impacts mean that an individual has been exposed to repeated impact forces to the head. These forces may or may not meet the threshold of a concussion.
- Research is ongoing but emerging data suggest that repetitive head impact also may be harmful and place a student-athlete at an increased risk of neurological complications later in life.

### Did you know?

- NCAA rules require that team physicians and athletic trainers manage your concussion and injury recovery independent of coaching staff, or other non-medical, influence.
- We're learning more about concussion every day. To find out more about the largest concussion study ever conducted, which is being led by the NCAA and U.S. Department of Defense, visit [ncaa.org/concussion](http://ncaa.org/concussion).

## CONCUSSION TIMELINE



For more information, visit [ncaa.org/concussion](http://ncaa.org/concussion).  
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## **Appendix N: Statement of Student-Athlete Responsibility**

### What is a CONCUSSION?

A concussion is a brain injury caused by a blow to the head, face or elsewhere on the body with a force transmitted to the head. Concussions can result from hitting a hard surface such as the ground or floor, from players colliding with each other or from being hit by a ball, bat or other sporting equipment.

### Facts about CONCUSSION

1. A concussion is a serious brain injury
2. Concussions can occur without loss of consciousness or other obvious signs
3. Concussions can occur from blows to the body as well as to the head
4. Concussions can occur in any sport
5. Athletes can still get a concussion even if they are wearing a helmet
6. Recognition and proper response to concussions when they first occur can help prevent further injury or even death

### Signs and Symptoms of CONCUSSION include

1. Headache or “pressure” in head
2. Nausea or vomiting
3. Balance problems or dizziness
4. Double or blurry vision
5. Sensitivity to light and /or noise
6. Feeling sluggish, hazy, foggy or groggy
7. Concentration or memory problems
8. Confusion
9. Sensation that one does not “feel right”

### Why knowing you have a CONCUSSION is important

Most concussions resolve but some concussions can lead to chronic symptoms such as headache, decreased memory, sleeping problems or personality change. Rest, avoiding another blow to the head and following the instructions of your athletic trainer are critical in helping you recover as fast and as safely as possible. Sustaining another concussion prior to recovery from the first increases your chance of long term symptoms. There have been reports of death with a second concussion in younger athletes. It is very important for you to report any concussion symptoms as described above to your athletic trainer or team physicians **at the time of injury**. This includes alerting the staff to symptoms in your teammates if you notice these.

### Statement of Student Athlete Responsibility

I accept responsibility for reporting all injuries and illnesses to the University of Florida Athletic Association (athletic trainers and University of Florida team physicians) including any signs and symptoms of CONCUSSION. I have read and understand the above information on concussion. I have received the NCAA concussion fact sheet. I will inform the athletic trainer or team physician immediately if I experience any of these symptoms or witness a teammate with these symptoms.

**Signature** of Student Athlete: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_