CONCUSSION BASELINE TESTING

Thank you for your interest in concussion baseline testing. Below are instructions which will help make the testing process as efficient as possible. Please plan to spend 15-20 minutes with us. We also request that parents are present for the entire testing, in case there are questions.

DATE OF BASELINE TESTING: Saturday, August 29 (Chesterfield County Public Schools—Career and Technical Education at 13900 Hull Street Road, Midlothian 23112)

TIME: Please call Sheltering Arms to schedule your testing session at 764-1001. Sessions are available from 10:00am to 4:00pm.

DOCUMENTS TO COMPLETE: **PRIOR** to August 29, please complete one of the sets of forms:

-*if your child is age 5 to 12 years*, please complete **BASELINE PACKET A**. In this Packet A, please fill out: (1) Consent Form for Baseline Testing, (2) the Background, Section 3 and Section 4 of the Child-SCAT3, and (3) the top section of the King-Devick [name, DOB, etc.]. Please ensure that your child's name is on every page.

-*if your child is 13 years or older*, please complete **BASELINE PACKET B**. In this Packet B, please fill out: (1) Consent Form for Baseline Testing, (2) the Background and Section 3 of the SCAT3, and (3) the top section of the King-Devick [name, DOB, etc.]. Please ensure that your child's name is on every page.

PAYMENT: The group rate for baseline testing is **$20**. Cash and checks only. Please make checks payable to Sheltering Arms. No credit cards. Payment accepted on-site only.

WHAT IS A BASELINE TEST? A baseline test is a pre-season screening conducted by a trained healthcare professional to determine an individual's normal levels of balance and brain functioning prior to engaging in athletic activity.

Baseline testing provides important information that can be compared with results of similar assessments in the event of a suspected concussion during the season. The comparison of baseline tests results to post-injury results can help in identifying severity of injury and support critical decisions regarding returning safely to play and other daily activities.

QUESTIONS? For more information about concussion care services, please visit www.ShelteringArms.com. For questions about this concussion baseline testing event, please contact Anne Chan at achan@shelteringarms.com.

CONSENT FOR BASELINE TESTING

The undersigned consents to concussion baseline testing (King-Devick™ and Child-SCAT3™ or SCAT3™, depending on age) provided by Sheltering Arms Physical Rehabilitation Centers. The undersigned understands that if he/she has any questions regarding concussion baseline testing and its results, he/she can contact Sheltering Arms by phone (804) 764-5240 or by email (achan@shelteringarms.com).

Athlete's Name (Print) _____

Athlete's Date of Birth _____

Parent's Name (Print) _____

Address _____

_____

Phone Number _____

Parent's Signature _____

Date _____

Name of Pediatrician _____

May we send your child's baseline testing results to his/her pediatrician? Please circle: YES NO

For Internal Use: *Patient Account Number:* _____

Medical Record Number: _____

Child-SCAT3™

Sport Concussion Assessment Tool for children ages 5 to12 years

For use by medical professionals only

Child's Name: _____

What is childSCAT3?[1]

The ChildSCAT3 is a standardized tool for evaluating injured children for concussion and can be used in children aged from 5 to 12 years. It supersedes the original SCAT and the SCAT2 published in 2005 and 2009, respectively[2]. For older persons, ages 13 years and over, please use the SCAT3. The ChildSCAT3 is designed for use by medical professionals. If you are not qualified, please use the Sport Concussion Recognition Tool[1].Preseason baseline testing with the ChildSCAT3 can be helpful for interpreting post-injury test scores.

Specific instructions for use of the ChildSCAT3 are provided on page 3. If you are not familiar with the ChildSCAT3, please read through these instructions carefully. This tool may be freely copied in its current form for distribution to individuals, teams, groups and organizations. Any revision and any reproduction in a digital form require approval by the Concussion in Sport Group.

NOTE: The diagnosis of a concussion is a clinical judgment, ideally made by a medical professional. The ChildSCAT3 should not be used solely to make, or exclude, the diagnosis of concussion in the absence of clinical judgement. An athlete may have a concussion even if their ChildSCAT3 is "normal".

What is a concussion?

A concussion is a disturbance in brain function caused by a direct or indirect force to the head. It results in a variety of non-specific signs and/or symptoms (like those listed below) and most often does not involve loss of consciousness. Concussion should be suspected in the presence of any one or more of the following:

- Symptoms (e.g., headache), or
- Physical signs (e.g., unsteadiness), or
- Impaired brain function (e.g. confusion) or
- Abnormal behaviour (e.g., change in personality).

SIDELINE ASSESSMENT

Indications for Emergency Management

NOTE: A hit to the head can sometimes be associated with a more severe brain injury. If the concussed child displays any of the following, then do not proceed with the ChildSCAT3, instead activate emergency procedures and urgent transportation to the nearest hospital:

- Glasgow Coma score less than 15
- Deteriorating mental status
- Potential spinal injury
- Progressive, worsening symptoms or new neurologic signs
- Persistent vomiting
- Evidence of skull fracture
- Post traumatic seizures
- Coagulopathy
- History of Neurosurgery (eg Shunt)
- Multiple injuries

1 Glasgow coma scale (GCS)

Best eye response (E)	
No eye opening	1
Eye opening in response to pain	2
Eye opening to speech	3
Eyes opening spontaneously	4
Best verbal response (V)	
No verbal response	1
Incomprehensible sounds	2
Inappropriate words	3
Confused	4
Oriented	5
Best motor response (M)	
No motor response	1
Extension to pain	2
Abnormal flexion to pain	3
Flexion/Withdrawal to pain	4
Localizes to pain	5
Obeys commands	6
Glasgow Coma score (E + V + M)	of 15

GCS should be recorded for all athletes in case of subsequent deterioration.

Potential signs of concussion?

If any of the following signs are observed after a direct or indirect blow to the head, the child should stop participation, be evaluated by a medical professional and **should not be permitted to return to sport the same day** if a concussion is suspected.

Any loss of consciousness?	☐ Y ☐ N
"If so, how long?"	_____
Balance or motor incoordination (stumbles, slow/laboured movements, etc.)?	☐ Y ☐ N
Disorientation or confusion (inability to respond appropriately to questions)?	☐ Y ☐ N
Loss of memory:	☐ Y ☐ N
"If so, how long?"	_____
"Before or after the injury?"	_____
Blank or vacant look:	☐ Y ☐ N
Visible facial injury in combination with any of the above:	☐ Y ☐ N

2 Sideline Assessment – child-Maddocks Score[3]

"I am going to ask you a few questions, please listen carefully and give your best effort."

Modified Maddocks questions (1 point for each correct answer)

Where are we at now?	0	1
Is it before or after lunch?	0	1
What did you have last lesson/class?	0	1
What is your teacher's name?	0	1
child-Maddocks score		of 4

Child-Maddocks score is for sideline diagnosis of concussion only and is not used for serial testing.

Any child with a suspected concussion should be REMOVED FROM PLAY, medically assessed and monitored for deterioration (i.e., should not be left alone). No child diagnosed with concussion should be returned to sports participation on the day of Injury.

BACKGROUND

Name: _____ Date/Time of Injury: _____

Examiner: _____ Date of Assessment: _____

Sport/team/school: _____

Age: _____ Gender: ☐ M ☐ F

Current school year/grade: _____

Dominant hand: ☐ right ☐ left ☐ neither

Mechanism of Injury("tell me what happened"?): _____

For Parent/carer to complete:

How many concussions has the child had in the past? _____

When was the most recent concussion? _____

How long was the recovery from the most recent concussion? _____

Has the child ever been hospitalized or had medical imaging done (CT or MRI) for a head injury?	☐ Y ☐ N
Has the child ever been diagnosed with headaches or migraines?	☐ Y ☐ N
Does the child have a learning disability, dyslexia, ADD/ADHD, seizure disorder?	☐ Y ☐ N
Has the child ever been diagnosed with depression, anxiety or other psychiatric disorder?	☐ Y ☐ N
Has anyone in the family ever been diagnosed with any of these problems?	☐ Y ☐ N
Is the child on any medications? If yes, please list:	☐ Y ☐ N

SYMPTOM EVALUATION

3 Child report

Name: _____

	never	rarely	sometimes	often
I have trouble paying attention	0	1	2	3
I get distracted easily	0	1	2	3
I have a hard time concentrating	0	1	2	3
I have problems remembering what people tell me	0	1	2	3
I have problems following directions	0	1	2	3
I daydream too much	0	1	2	3
I get confused	0	1	2	3
I forget things	0	1	2	3
I have problems finishing things	0	1	2	3
I have trouble figuring things out	0	1	2	3
It's hard for me to learn new things	0	1	2	3
I have headaches	0	1	2	3
I feel dizzy	0	1	2	3
I feel like the room is spinning	0	1	2	3
I feel like I'm going to faint	0	1	2	3
Things are blurry when I look at them	0	1	2	3
I see double	0	1	2	3
I feel sick to my stomach	0	1	2	3
I get tired a lot	0	1	2	3
I get tired easily	0	1	2	3

Total number of symptoms (Maximum possible 20) _____

Symptom severity score (Maximum possible 20 x 3 = 60) _____

☐ self rated ☐ clinician interview ☐ self rated and clinician monitored

4 Parent report

The child	never	rarely	sometimes	often
has trouble sustaining attention	0	1	2	3
is easily distracted	0	1	2	3
has difficulty concentrating	0	1	2	3
has problems remembering what he/she is told	0	1	2	3
has difficulty following directions	0	1	2	3
tends to daydream	0	1	2	3
gets confused	0	1	2	3
is forgetful	0	1	2	3
has difficulty completeing tasks	0	1	2	3
has poor problem solving skills	0	1	2	3
has problems learning	0	1	2	3
has headaches	0	1	2	3
feels dizzy	0	1	2	3
has a feeling that the room is spinning	0	1	2	3
feels faint	0	1	2	3
has blurred vision	0	1	2	3
has double vision	0	1	2	3
experiences nausea	0	1	2	3
gets tired a lot	0	1	2	3
gets tired easily	0	1	2	3

Total number of symptoms (Maximum possible 20) _____

Symptom severity score (Maximum possible 20 x 3 = 60) _____

Do the symptoms get worse with physical activity? ☐ Y ☐ N

Do the symptoms get worse with mental activity? ☐ Y ☐ N

☐ parent self rated ☐ clinician interview ☐ parent self rated and clinician monitored

Overall rating for parent/teacher/coach/carer to answer.
How different is the child acting compared to his/her usual self?

Please circle one response:

no different | very different | unsure | N/A

Name of person completing Parent-report: _____

Relationship to child of person completing Parent-report: _____

Scoring on the ChildSCAT3 should not be used as a stand-alone method to diagnose concussion, measure recovery or make decisions about an athlete's readiness to return to competition after concussion.

COGNITIVE & PHYSICAL EVALUATION

5 Cognitive assessment

Standardized Assessment of Concussion – Child Version (SAC-C)[4]

Orientation (1 point for each correct answer)

What month is it?	0	1
What is the date today?	0	1
What is the day of the week?	0	1
What year is it?	0	1
Orientation score		of 4

Immediate memory

List	Trial 1	Trial 2	Trial 3	Alternative word list		
elbow	0 1	0 1	0 1	candle	baby	finger
apple	0 1	0 1	0 1	paper	monkey	penny
carpet	0 1	0 1	0 1	sugar	perfume	blanket
saddle	0 1	0 1	0 1	sandwich	sunset	lemon
bubble	0 1	0 1	0 1	wagon	iron	insect
Total						

Immediate memory score total of 15

Concentration: Digits Backward

List	Trial 1	Alternative digit list		
6-2	0 1	5-2	4-1	4-9
4-9-3	0 1	6-2-9	5-2-6	4-1-5
3-8-1-4	0 1	3-2-7-9	1-7-9-5	4-9-6-8
6-2-9-7-1	0 1	1-5-2-8-6	3-8-5-2-7	6-1-8-4-3
7-1-8-4-6-2	0 1	5-3-9-1-4-8	8-3-1-9-6-4	7-2-4-8-5-6
Total of 5				

Concentration: Days in Reverse Order (1 pt. for entire sequence correct)

Sunday-Saturday-Friday-Thursday-Wednesday-Tuesday-Monday	0	1
Concentration score		of 6

6 Neck Examination:

Range of motion Tenderness Upper and lower limb sensation & strength

Findings: _____

7 Balance examination

Do one or both of the following tests.

Footwear (shoes, barefoot, braces, tape, etc.) _____

Modified Balance Error Scoring System (BESS) testing[5]

Which foot was tested (i.e. which is the non-dominant foot) ☐ Left ☐ Right

Testing surface (hard floor, field, etc.) _____

Condition

Double leg stance: Errors

Tandem stance (non-dominant foot at back): Errors

Tandem gait[6,7]

Time taken to complete (best of 4 trials): _____ seconds

If child attempted, but unable to complete tandem gait, mark here ☐

8 Coordination examination

Upper limb coordination

Which arm was tested: ☐ Left ☐ Right

Coordination score of 1

9 SAC Delayed Recall[4]

Delayed recall score of 5

Since signs and symptoms may evolve over time, it is important to consider repeat evaluation in the acute assessment of concussion.

King-Devick Concussion Screening Test
Score Sheet - Version 1

Subject Name/ID Number:_____	Date of Birth:_____
Subject's Baseline Time:_____	Baseline Date:_____
Team/Sport:_____	Glasses/Contacts:_____

Scoring King-Devick Test

When testing, start the timer when the subject reads the first number on the test card and stop the timer when the subject reads the last number on the test card. Continue timing when the subject reads the first number on the second test card and stop the timer when the subject reads the last number on the test card. Repeat for third test card. Do not include the time between completing individual test cards. Total Time is the total testing time for all three test cards combined.

Answer Key Test Card I	Answer Key Test Card II	Answer Key Test Card III
2 – 5 – 8 – 0 – 7	3 – 7 – 5 – 9 – 0	5 – 4 – 1 – 8 – 0
3 – 7 – 9 – 4 – 6	2 – 5 – 7 – 4 – 6	4 – 6 – 3 – 5 – 9
5 – 3 – 1 – 6 – 4	1 – 4 – 7 – 6 – 3	7 – 5 – 4 – 2 – 7
7 – 9 – 7 – 3 – 5	7 – 9 – 3 – 9 – 0	3 – 2 – 6 – 9 – 4
1 – 5 – 4 – 9 – 2	4 – 5 – 2 – 1 – 7	1 – 4 – 5 – 1 – 3
6 – 5 – 5 – 7 – 3	5 – 3 – 7 – 4 – 8	9 – 3 – 4 – 8 – 5
3 – 1 – 8 – 6 – 4	7 – 4 – 6 – 5 – 2	5 – 1 – 6 – 3 – 1
5 – 3 – 7 – 5 – 2	9 – 0 – 2 – 3 – 6	4 – 3 – 5 – 2 – 7

Establishing A King-Devick Test Baseline

*When establishing a Subject's initial Baseline Time, administer the King-Devick Test twice using the scoring instructions above. Use the fastest Baseline Total Time without errors of the two attempts below.**

Baseline Attempt Time #1	Baseline Attempt Time #2	*Subject's Baseline Time
Total Time: _____	Total Time: _____	Total Time: _____
Total Errors: _____	Total Errors: _____	Total Errors: _____
Tester Initials: _____	Tester Initials: _____	Tester Initials: _____

Testing After A Suspected Head Trauma

When testing after a suspected head trauma, the test should be administered once.

If the subject performs **SLOWER** than his/her baseline or has **INCREASED** errors, the subject should be ***removed-from-play*** and referred to a health care professional for additional evaluation. If the subject performs **FASTER** than his/her baseline **WITHOUT** errors, the Total Time will become the subject's new Baseline Time.

Date: _____	Date: _____	Date: _____
Total Time: _____	Total Time: _____	Total Time: _____
Total Errors: _____	Total Errors: _____	Total Errors: _____
Tester Initials: _____	Tester Initials: _____	Tester Initials: _____
Comments: _____	Comments: _____	Comments: _____

King-Devick Test is for screening purposes only and any suspicion or indication of head trauma should be evaluated by a licensed professional.