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TPCH Concussion Policy

TPCH follows the guidelines listed below for return to athletic participation following a concussion:

Any student athlete who suffers a concussion will be held out of athletic participation until symptom free for seven consecutive days. Symptom free means that the athlete does not currently have any symptoms, including but not limited to headache, dizziness, lightheadedness, stomach upset, etc. Day one begins after 24 hours symptom-free. If at any time prior to the seventh day, symptoms return, the athlete must restart the return-to-play protocol, awaiting 24 hours after symptoms clear before beginning the process again. On the second day symptom-free, the athlete will begin a mild exercise program to be supervised by the athletic trainer or a designated coach. If the athlete is supervised by a coach, that coach will communicate the results of the athlete's activities to the Director of Sports Medicine on the same day the activity is completed. As long as no symptoms return, the exercise program will gradually increase over the next two days. On days six and seven, the athlete will participate in non-contact, sport-specific drills. These drills should not place the student in a situation in which he/she could possibly be hit by an object or another player. Once the athlete is able to complete seven-day program without the return of any symptoms and is cleared by a physician, he/she may return to athletic participation. In the event the athlete is released by a physician prior to the completion of the seven-day program, he/she can return to athletic participation immediately upon completion of the required seven days with no need of further physician evaluation unless symptoms return at any point during the seven-day period.

A student athlete is determined to have suffered a concussion if one or both of the following is true:

- The athletic trainer determines, based on his/her evaluation, that the student athlete has suffered a concussion.
- A physician (emergency room or otherwise) diagnoses the student athlete as having a concussion.

These guidelines have been established by Dr. Kelly W. Lobb, MD, team physician for Bryan ISD & Josh Woodall, LAT, ATC, head athletic trainer for Bryan ISD.

These guidelines have been reviewed and adopted by TPCH Concussion Oversight Team.

Concussion Oversight Team

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Baseline Concussion Assessment

The purpose of the Baseline Concussion Assessment (BCA) is to provide an individualized, step-wise management approach in the event that an athlete sustains a concussion. The information gathered during the BCA will be used to determine the “normal” status for an individual athlete when compared to the information gathered during the initial and post-concussion assessments. This approach allows the athletic trainer to treat each athlete and each concussion individually.

*Baseline testing is not practical in all cases and may or may not be incorporated into a school district’s plan.

ImPACT

Immediate Post-concussion Assessment and Cognitive Testing (ImPACT) – 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, and reaction time.

Visual Dynamic Acuity

This test requires that the athlete read a vision card prior to quickly shaking his/her head back and forth while maintaining focus on the letters. The athlete will then repeat the test with rapid up and down motion of the head. A test will be deemed negative when the athlete is able to read the letters without difficulty. A test will be deemed positive for indicating a concussion when the athlete is unable to focus on the letters and/or read them aloud.

Baseline Concussion Assessment

Symptom Checklist

Symptom	None	Mild	Moderate	Severe
Headache	0	1 2	3 4	5 6
Pressure	0	1 2	3 4	5 6
Neck Pain	0	1 2	3 4	5 6
Nausea/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 "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/Anxious	0	1 2	3 4	5 6

Total Number of Symptoms (Maximum possible: 22): _____

Symptom Severity Score (Maximum possible 132): _____

Do the symptoms worsen with physical activity? Yes ___ No ___

Do the symptoms worsen with mental activity? Yes ___ No ___

Overall rating: if you know the athlete well prior to the injury, how different is the athlete acting compared to his/her usual self (Circle one)?

No different

Very Different

Unsure

N/A

Baseline Concussion Assessment

Balance error Scoring System (BESS)

Three different stances (double leg, single leg, and tandem) are completed twice: once on a firm surface and once while on a 10cm-thick piece of medium-density foam for a total of 6 trials. Athletes are asked to assume the required stance by placing their hands on their iliac crests and then close their eyes for twenty seconds. Upon losing their balance, athletes are instructed to make any necessary adjustments and return to the testing position as quickly as possible. Performance is scored by adding one error point for each error committed. Trials are considered to be incomplete if the athlete cannot sustain the stance position for longer than five seconds during the entire 20-second testing period.

During the double-leg stances, athletes are asked to keep their feet 6 inches apart. The athlete is also asked to stand quietly and as motionless as possible in the stance position, keeping the hands on the iliac crest and eyes closed.

During the single leg stance, the athlete is asked to maintain the contralateral limb in 20-30 degrees of hip flexion and 40-50 degrees of knee flexion. The athlete is also asked to stand quietly and motionless as possible in the stance position, keeping the hands on the iliac crest and eyes closed. The single leg stance tests are performed on the non-dominant foot.

During the tandem leg stance, athletes are asked to place their non-dominant foot behind the dominant foot, standing on the foam pad diagonally is suggested. The athlete is also asked to stand quietly and as motionless as possible in the stance position, keeping the hands on the iliac crest and eyes closed.

	Firm Surface	Foam Surface
Double Leg Stance		
Single Leg Stance		
Tandem Stance		
Total Scores		
Grand Total		

Types of Errors:

1. Hands lifted off iliac crest
2. Opening Eyes
3. Step, Stumble, or Fall
4. Moving Hip into > 30 degrees abduction
5. Lifting Forefoot or Heel
6. Remaining out of testing position > 5 seconds

The BESS is calculated by adding one point for each error during the 6-20-second tests.

Baseline Concussion Assessment

Coordination Examination

Coordination examination
Upper limb coordination

Which arm was tested: Left Right

Coordination score of 1

Concentration

Concentration: Digits Backward

List	Trial 1		Alternative digit list		
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 4					

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

Dec-Nov-Oct-Sept-Aug-Jul-Jun-May-Apr-Mar-Feb-Jan	0	1
Concentration score	of 5	

Immediate Memory

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**

Initial Concussion Assessment

When a concussion is suspected, the athletic trainer will remove the athlete from participation and begin the Initial Concussion Assessment. The Initial Concussion Assessment should be performed immediately after suspicion of concussion. History, observation, palpation, and the neurological examination should be performed first to rule out life-threatening concerns. Once these two portions of the Initial Concussion Assessment are completed, the remainder of the Initial Concussion Assessment should be completed. Once the Initial Concussion Assessment is complete, the information will be compared to the athlete's Baseline Concussion Assessment to determine the extent to which brain function has been affected (if applicable).

History, Observation, & Palpation

History:

- What happened?
- Whom did we play last week (retrograde amnesia)?
- Do you remember walking off of the field (anterograde amnesia)?
- Does your head hurt?
- Do you have any neck pain?

Observation:

- Is the athlete's scalp swollen or bleeding?
- Does the athlete have a clear or straw-colored fluid in the ear canal?
- Does the athlete know what day and date are?
- Does the athlete have a blank or vacant stare?
- Does the athlete have difficulty keeping eyes open?
- Does the athlete have slurred or incoherent speech?
- Does the athlete have delayed verbal or motor responses?

Palpation:

- Palpate both neck and skull to identify areas of point tenderness or deformity

Initial Concussion Assessment

Neurological Exam

No.	Name	Function	Nerve Type	Clinical Test
I	Olfactory	Smell	Sensory	Provide distinct smelling object(s)
II	Optic	Visual Acuity	Sensory	Read small print
III	Oculomotor	Pupillary Reaction	Motor	Pupillary response to light as well as up, down, and medial gaze
IV	Trochlear	Eye movement	Motor	Have eye follow finger downward and laterally without head movement
V	Trigeminal	Mastication and facial sensation	Both	Identify location of touch about face; hold mouth open against resistance; clench teeth
VI	Abducens	Lateral eye movement	Motor	Move eyes from side to side
VII	Facial	Facial expressions and taste	Both	Smile, wrinkle forehead, wink, puff cheeks, close eyes tightly,
VIII	Vestibulocochlear	Equilibrium and hearing	Sensory	Identify sounds, balance assessment
IX	Glossopharyngeal	Voice and swallow	Both	Say "ah," swallow
X	Vagus	Voice and gag reflex	Both	Test gag reflex
XI	Accessory	Neck strength; SCM & Traps	Motor	Resist shoulder shrug
XII	Hypoglossal	Tongue movement	Motor	Stick out tongue and resist with tongue depressor

Initial Concussion Assessment

1. Symptom Checklist

2. BESS

3. Coordination

4. Dynamic Visual Acuity

5. Concentration

6. Immediate Memory

7. Refer to ER if:

a. LOC

b. Post Traumatic Amnesia is > 15 minutes

c. Athlete exhibits neurological deficits

8. Inform Parents and Coaches

Post Concussion Assessment

Refer to Concussion Specialist or PCP

If PCP is chosen by the parent rather than the Concussion Specialist, have the athlete deliver MD paperwork to their physician for completion and then return said paperwork to the athletic trainer.

Re-Check Against Baselines

To determine if symptoms have ceased following a concussion, use the Post-Concussion Assessment. The Post-Concussion Assessment should be completed within 24-48 hours of the Initial Concussion Assessment as well as on the day that the athlete reports to have no symptoms (if applicable).

ImPACT Retest

The ImPACT test should be administered and the results compared to the original baseline test that is on file for the individual athlete (if applicable).

Continue to Communicate with Coaches

Communication with coaches regarding the progress of the individual athlete will take place through Danny Barringer via e-mail.

Continue to Communicate with Parents

Athlete should be reminded to check-in with the athletic trainer daily.

Coordinate with Counselors, Principals, Teachers, and Nurse

Counselors, principals, and teachers will be contacted and informed that the student athlete has sustained a concussion and should receive accommodations for the classroom. Accommodations might include being allowed to leave class to rest in the nurse's office, given extra time on assignments, taking tests on a later date, or qualifying for section 504b status.

Symptom Free

1. Symptom free means that the athlete currently does not have any symptoms, including but not limited to headache, dizziness, lightheadedness, upset stomach, etc.
2. Athlete is within normal range of ImPACT Baseline Test
3. Athlete has returned to baseline levels when comparing the Post-Concussion Assessment with the Baseline Concussion Assessment.
 - a. If Post-Concussion Assessment scores are better than the Baseline Assessment scores, then the Post Concussion Assessment Scores become the new baseline scores.

If the athlete does not meet all of the above criteria, then the athlete is not considered to be symptom free. If the athlete does meet the above criteria, the the athlete may begin the Return-To-Play Protocol.

Management & Return-To-Play Protocol

*The Franklin ISD Return-To-Play Protocol includes exertional, balance, vision, and cognitive exercise.

Day 1:

The athlete completes the symptom checklist and reports no symptoms. The athlete will rest.

Day 2:

The athlete will begin a mild exercise program that involves jogging for 1 mile.

Day 3:

Exercise will gradually increase. The athlete will run a mile for time and then perform 50 yards of bear crawls.

Day 4:

The athlete will perform 3-4 repetitions of weight lifting equal to approximately 80% of their maximum lifting capacity. The athlete will also perform a balance test under the supervision of an athletic trainer.

Day 5:

The athlete will run 10 sprints from one sideline of the football field to halfway across the field and back to the sideline again. They must complete each sprint in under 20 seconds and must start a new sprint every 60 seconds.

Day 6:

The athlete will perform non-contact, sport-specific drills. These drills should not place the student in a situation in which he/she could possibly be hit by an object or another player.

Day 7:

The athlete will continue to go through non-contact, sport-specific drills. These drills should not place the student in a situation in which he/she could possibly be hit by an object or another player.

Return To Play:

Once the athlete is able to complete the seven-day program without return of any symptoms and has been cleared by a physician, he/she may return to athletic participation. In the event the athlete is released by a physician prior to the completion of the seven-day program, he/she will be able to return to athletic participation immediately upon completion of the required seven days with no need of further physician evaluation unless symptoms return during this time frame.

Other Considerations

- Consider cumulative effects of multiple concussions
 - Increased risk for additional concussions
 - Duration of signs and symptoms will be longer
- Cascade of changes occur with a concussion
 - Depolarization and initiation of action potentials
 - Excitatory neurotransmitter release
 - Efflux of Potassium / Influx of Calcium, causing
 - Change in cellular physiology, causing
 - The Na⁺/K pump to work overtime, causing
 - Increase amounts of ATP, causing
 - Dramatic jump in glucose metabolism, causing
 - Cellular energy crisis, causing
 - The brain to be less able to respond adequately to a second injury, potentially leading to longer-lasting effects.
 - Reductions in Magnesium
 - Magnesium is necessary for maintaining the cellular membrane potential and initiating protein synthesis
 - May also cause a greater influx of calcium
 - Concussed brain begins period of depressed metabolism
 - Worsened energy crisis
 - Cell death can occur, and if unchecked, calcium accumulates
- Mouth guards are NOT proven to reduce concussions

Resources

Zurich Concussion Position Statement 2008: Concussion Modifiers

Dell & Wells Fargo: Play it Safe Concussion Solutions

Alsalahee, BA et al. Vestibular Rehabilitation for Dizziness & Balance Disorders after Concussion. JNPT 2010; 34:87-93

ACMS has guidelines on light/moderate aerobic exercise

Dick's Sporting Goods — ImPACT

Dell's Children's — Grant Proposal — ImPACT

Apps:

Concussion — Free

Play it Safe — Free

SCAT 2 — \$3.99

Concussion Recognition & Response — \$3.99

SCAT 3 <http://bjsm.bmj.com/content/47/5/259.full.pdf+html>

THE PHYSICANS CENTRE HOSPITAL SPORTS MEDICINE

Date: _____

To the parent/guardian of _____

Your child has been evaluated by a Physicians Centre Hospital athletic trainer and is suspected to have sustained a concussion. House Bill 2038 requires that any athlete suspected of having sustained a concussion must be diagnosed by a physician before they are allowed to return to practice or play.

At Home Care

If you feel the need to provide your child with medication, it is important to note that some doctors recommend acetaminophen rather than other over-the-counter medications in treating pain associated with concussions. Never give aspirin or ibuprofen to anyone suspected of having a concussion.

If your child presents with any of the following signs or symptoms, please seek medical care immediately.

- Declining levels of consciousness
- Cannot remember or recognize people or places
- Vomiting
- Seizures
- Changes or loss of sensation or movement
- Loss of vision, hearing, or other senses
- Any worsening of current symptoms

Further Care

Please take the paper that is attached to this letter to your doctor's appointment and have the doctor fill out the bottom of the page. Return the form to your coach once your doctor has filled it out and signed it.

Signs and Symptoms

Your child presented with the following signs and symptoms:

THE PHYSICIANS CENTRE HOSPITAL SPORTS MEDICINE

Physician Clearance Form for Athletes with a Concussion

The Physicians Centre Hospital Sports Medicine Department has developed a Return to Play Protocol that satisfies recommendation of the UIL as well as the requirements of HB 2038 and Chapter 38, Sub Chapter D of the Texas Education Code.

The Physicians Centre Hospital employs licensed and certified athletic trainers to monitor the progress of athletes that have sustained concussions. Feel free to contact the Director of Sports Medicine in reference to _____ and the concussion that he/she sustained on _____.

Danny Barringer, MS, LAT, ATC
Director of Sports Medicine
The Physicians Centre Hospital
Cell: 920-903-2306
Office: 979-731-3913
email: dbarringer@nshinc.com

Once medical clearance has been obtained from the athlete's physician, the Return to Play Protocol will begin. This is a 7-day progression of activity that allows the athlete a safe return to play after sustaining a concussion.

.....
To the treating physician of _____:

Please check one of the following:

_____ Athlete may begin The Physicians Centre Hospital Concussion Return to Play Protocol once he/she is symptom-free. Once the RTP Protocol has been satisfactorily completed, the athlete may return to athletics with no restrictions.

_____ Athlete may not begin The Physicians Centre Hospital Concussion Return to Play Protocol and must be re-evaluated in my office on _____.

_____ This Athlete has not sustained a concussion and may return to play on _____.

_____ Other recommendations of treating physician:

Name of Physician: _____

Phone Number: _____

Physician Signature: _____

Date: _____

The Physicians Centre Hospital

Return to Play Progression

	Description	Date Completed	Comments
Day 1	Athlete must be symptom-free for 24 hours before starting. Athlete will complete the ImPACT Test and rest.		
Day 2	Athlete will jog one mile. This should be done within a 10-minute period.		
Day 3	Athlete will run one mile for time followed by 50 yards of bear crawls. ImPACT Test		
Day 4	Athlete may resume weightlifting. Athlete should go through a weightlifting workout.		
Day 5	Athlete should perform an active warm-up and then complete 10 110-yard sprints in 10 minutes. Try to complete each sprint in less than 20 seconds. ImPACT Test		
Day 6	Athlete may go through a non-contact practice. Drills should not place athlete in a position to receive a blow to the head.		
Day 7	Athlete may go through a non-contact practice. Drills should not place athlete in a position to receive a blow to the head. ImPACT Test		

Please contact Danny Barringer with any questions at 920-903-2306.