

Title St. Luke's Sports Medicine Concussion Policy and Management Guidelines - Pennsylvania K-12
Scope: Policy & Procedures: Sports Medicine Relationships
Manual: Sports Medicine Relationships Policy & Procedure Manual
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I. Protocol Statement

1. This document outlines the protocols and procedures to assist in the management of concussion for the safe return to academics and athletics for patients managed by St. Luke's University Health Network. All parties should acknowledge that each concussion is unique, and that this policy provides guidelines for care; however, care plans should be individualized to address the needs of each patient and each unique injury with oversight of appropriate healthcare providers (ie. athletic trainers, physicians, etc).

II. Purpose

1. To define, develop and communicate a comprehensive outline on the proper recognition, evaluation, diagnosis, and management of a student-athlete who sustains a concussion, based on best available evidence, to guide patient care decision-making to formulate a timely and appropriate management plan.

II. Definition

1. A concussion is a brain injury defined as a complex pathophysiological process affecting the brain, induced by biomechanical forces.¹ Other key defining features of concussions include:
 - a. Occur from forces applied directly or indirectly to the skull, face, neck, shoulders, and other parts of the body that result in the rapid acceleration and deceleration of the brain.²
 - b. Result in the rapid onset of temporary clinical and neurological symptoms. A loss of consciousness does not always occur but may occur with a concussion. In some cases, signs and symptoms may evolve over minutes to hours.²
 - c. May result in neuropathological changes; however, the acute clinical symptoms reflect a functional disturbance rather than a gross structural injury. In such cases no abnormality may be seen on standard structural neuroimaging studies.²
 - d. Resolution of the clinical and neurological symptoms typically follow a sequential course. However, in some cases this may be prolonged.²

IV. Procedure

SECTION I: EDUCATION REQUIREMENTS

In accordance with the **Pennsylvania Safety in Youth Sports Act**³, the following educational programs and requirements for all St. Luke's affiliated groups including coaches, parents and student-athletes has been established.

1. The Athletic Trainer will facilitate an informational meeting on concussions annually or before each sport season for coaches, parents, and student-athletes. Execution of these meetings are

at the discretion of the athletics' program assigned Athletic Training staff in collaboration with athletic program administrators. It is recommended that educational materials of the information below be distributed electronically via email to coaches and parents/guardians who are unable to attend the informational meeting. These meetings should include but not limited to:

- a. Prevention Strategies
 - b. Management
 - c. Plan of Care
 - d. Return-to-Academics
 - e. Return-to-Sport.
2. All students desiring to participate in any athletic program and the student's parent, or guardian shall, sign and return to the school an acknowledgement of their receipt and review of concussion and traumatic brain injury information each school year (ie. Section 3 of the PIAA Pre-Participation Exam).
 3. Once each school year, a coach shall complete the concussion management certification training course offered by the Centers for Disease Control and Prevention, the National Federation of State High School Associations or another provider approved by the Department of Health.
 - a. Coaches should sign and return to the school an acknowledgement of their receipt of the concussion policy each school year (ie. Addendum 1b).
 4. All members of the Sports Medicine Team who are authorized to make decisions on when the student-athlete can return-to-sport must complete, or have completed, training in the evaluation and management of concussion.
 5. Additional training material is available online through the Pennsylvania Department of Education or Health (www.state.pa.us) and through the Centers for Disease Control and Prevention (www.cdc.gov).

SECTION II: PREVENTION STRATEGIES

Student-Athlete

1. Student-athletes are highly encouraged to attend annual informational meetings on concussion where they will be educated on the importance of taking responsibility to report their signs and/or symptoms of a concussion to their Coach, Parent, or Athletic Trainer, as well as adhering to the St. Luke's Sports Medicine Concussion Policy.
2. All student-athletes participating in interscholastic athletics will complete baseline validated neuropsychological testing (ie. ImPACT, SCAT5, or other approved neuropsychological testing tool) administered by a trained healthcare provider.^{3,4}
 - a. Baseline ImPACT testing may be administered in-person at school or asynchronously at-home. If baseline testing is administered asynchronously, the athletic trainer should provide at-home instructions (ie. Addendum 2).
 - i. If a student-athlete's ImPACT baseline test is deemed invalid (++) , the baseline test should be taken a second time under the supervision of a licensed Athletic Trainer or designee OR another validated neuropsychological testing tool should be used. If any questions or concerns arise, the athletic trainer should consult the team physician.
 - ii. It is recommended that baseline testing be completed biennially for student-athletes ages 13 and older and annually for student-athletes 12 and under.
 1. If a student-athlete sustains a concussion, the student-athlete should repeat baseline testing the following academic year. In some cases, it may be indicated to use the most-recent post-injury test following injury as the new baseline as outlined by the treating physician or team physician.

- b. Certain circumstances (ie. Learning disabilities, colorblindness, etc.) may require modification to baseline testing. Any concerns should be addressed with the team physician.
3. The student-athlete is responsible for performing daily inspections of their equipment and reporting any issues to the appropriate designate prior to the next team event. The student-athlete may not perform any maintenance on their equipment nor alter their equipment. Sports equipment includes but is not limited to helmets, protective eye wear and mouth guards.

Coach / Strength and Conditioning Coach

1. The concussion policy will be reviewed annually with coaches by members of the St. Luke's Sports Medicine Team.
2. Once each year, all coaches will be required to complete a PA Department of Health approved concussion management certification course.⁵
3. Coaches are highly encouraged to attend annual informational meetings on concussion.
4. Coaches should encourage a culture of reporting injury and illness, including concussion.
5. Coaches should teach proper technique to reduce the risk of head injury.
6. All headgear must be certified by the appropriate governing organization and fitted by a designate that has appropriate knowledge of equipment fitting.^{6,7}

Parents/Guardians

1. Parents/Guardians will be educated on the importance of reporting their child's signs and symptoms to the Coach, Athletic Trainer, or other appropriate school official as well as adhering to the Concussion Policy.
2. Parents are highly encouraged to attend annual informational meetings on concussion.

Administrators

1. Administrators should be provided with a copy of the concussion policy.
 - a. Administrators should promote a culture of reporting injury and illness, including concussion, and fair play amongst coaching staff.

School Nurse

1. The school nurse should be provided with a copy of the concussion policy. This policy may be shared with other members of the school concussion management team.

SECTION III: MANAGEMENT

Step 1: Acute Management

1. Any student-athlete who exhibits any signs and/or symptoms of a concussion while participating in a school sponsored or Network related athletic event will be removed from activity for the day and shall not return or perform activities that may increase the severity or trigger signs and/or symptoms.
2. If an Athletic Trainer or a Team Physician is on site, the student-athlete will be referred to that individual for an immediate concussion evaluation.²
 - a. The recognition of a suspected concussion is therefore best approached using multidimensional testing guided via expert consensus.
 - b. At a minimum the SCAT5 should be performed 15-20 minutes or at the athletic trainer's earliest convenience following injury.
 - i. Child SCAT5 should be utilized when evaluating student-athletes ages 12 and younger.
 - ii. SCAT5 should be utilized when evaluating student-athletes ages 13 and above.

- c. It is recommended that the examination be performed in a distraction free zone whenever possible.
3. **After examination by the Team Physician or Athletic Trainer, a student-athlete who presents with concussion-like signs and/or symptoms shall be excluded from participation for the remainder of the day. Return to participation on the same day will only be allowed if the Team Physician and/or Athletic Trainer determine that no concussion or other brain injury has occurred, and the student-athlete is otherwise in good health.**
 - a. Documentation from a physician must be obtained prior to returning the student-athlete back to activity.
4. Any student-athlete who is seen in the Emergency Department or at an Urgent Care facility for concussion-like symptoms must follow up and receive clearance from a physician trained in the management of a concussion prior to beginning the return-to-sport protocol.
 - a. If red flags are present, the student-athlete should be transported to the Emergency Department. If no red flags are present, the athlete should schedule an appointment with a physician trained in the management of concussion as stated later in this policy. It is not recommended to follow-up with Urgent Care for the treatment or clearance from head injury.
5. The Athletic Trainer must contact the student-athlete's parent or guardian if he or she is exhibiting any signs and/or symptoms of a concussion or other brain injury.
 - a. It is recommended that written at home and school instructions be given to the student-athlete's parent or guardian (ie. Addendum 3).
6. If a Physician or Athletic Trainer is not present at the event, the head coach for the team will be responsible for keeping the student-athlete out of play for the day and must contact the Athletic Trainer and the parent or guardian of the student-athlete.

Step 2: Monitoring and Emergent Referral

1. Following a suspected concussion, the Athletic Trainer should perform serial monitoring every 15-20 minutes for signs of cognitive or neurological deterioration.
2. Any deterioration or displaying of the following signs or symptoms will warrant immediate emergency referral:
 - a. Loss of consciousness
 - b. Deterioration of neurological function
 - c. Decreasing level of consciousness
 - d. Abnormally unequal, dilated, or unreactive pupils
 - e. Any signs or symptoms of associated head/neck injuries, spine or skull fractures, or bleeding
 - f. Changes in mental status
 - g. Slurring of speech
 - h. Headaches that are worsening over time
 - i. Inability to recall new events after the injury (Anterograde amnesia)
 - j. Seizure
 - k. Repetitive vomiting
 - l. Unusual behavior, increased confusion, restlessness or agitation.
3. Parents will be notified of concussion as soon as able once student-athlete is stabilized.
 - a. A written copy of home and school instructions will be provided to and reviewed with the parents, such as the last page of the SCAT5, CDC references, additional school or Network handouts (ie. Addendum 4).
4. Student-athletes with a suspected concussion shall be withheld from all physical activity until cleared by a physician trained in the management of concussion.

- a. The only exception is symptom-limited aerobic non-contact, low risk physical activity as tolerable at the Athletic Trainer's discretion after the first 48-hours post-injury.

Step 3: Plan of Care

1. The student-athlete will be referred to a physician trained in the evaluation and management of concussions.
 - a. The Athletic Trainer will help to facilitate this appointment with a St. Luke's concussion specialist if scheduling an appointment within the St. Luke's Network. If treated out-of-network the parent should facilitate this appointment with the physician's office.
 - i. If treated by a physician in the St. Luke's Network:
 1. Student-Athletes ages 9 to 25 will be referred directly to Sports Medicine for evaluation.
 2. Student-Athletes ages 8 and under will be referred to Pediatric Neurology.
 - ii. If treated by a physician out-of-network, the physician should be trained in the management of sport-related concussion and clearance notes must be provided to the athletic trainer.
 1. If any questions or concerns arise, the final decision to return-to-sport is at the team physician's discretion. Outside notes will not override the team physician's decision.
 - b. The physician will make return to school recommendations and articulate this with the student-athlete, parent/guardian, school nurse, and Athletic Trainer.
2. The Athletic Trainer will be responsible for notifying coaches of the student-athlete's concussion and will be updated regularly on their appropriate level of participation.
3. The student-athlete will be instructed to check in with the Athletic Trainer daily and if applicable the school nurse.
 - a. A Graded Symptom Checklist (GSC) will be completed daily by the Athletic Trainer. The Athletic Trainer will maintain daily logs with HIPAA compliance.
 - b. A decline in condition will be communicated directly to the treating physician.
4. Based on physician clinical judgement, a referral to Physical Therapy may be warranted for symptomatic student-athletes.
 - a. The Athletic Trainer should consult with the treating physician and/or physical therapist to determine if additional rehabilitation is warranted to be performed by the athletic trainer.
5. The physician may establish post-concussive (neuropsychological [ImPACT®], vestibular, ocular, cognitive) testing timeline.
 - a. Athletes will not have more than one neuropsychological test in a seven-day period unless outlined in treatment plan of the physician.

Step 4: Return-to-Learn: Secondary School

1. The Athletic Trainer and Parent/Guardian will work together to ensure the school nurse is notified once concussion is suspected (see Addendum 4 for an example).
 - a. If the injury occurred outside of a St. Luke's affiliated school district (ie. Youth event), the parent/guardian will be responsible to notify the school nurse of the suspected concussion. The Athletic Trainer should inform the parent/guardian that the School Nurse should be notified in cases of a suspected concussion.
 - b. The school's concussion management team, including but not limited to the School Nurse and Guidance Counselor, will work collaboratively to notify the appropriate teachers of the student-athlete's concussion, and possible academic support.

- c. In the case of a student-athlete returning to the classroom prior to seeing a physician, the school may choose to implement academic adjustments prior to receiving physician orders as seen fit.
 - d. The Physician may prescribe academic accommodations, including the use of a stepwise approach to return-to-learn. Receipt of physician notes to the Athletic Trainer or Parent/Guardian should be provided to the School Nurse.
 - i. The Physician may recommend performing school activities that do not worsen symptoms (symptom-limited activity).
 - e. Examples of academic support include but are not limited to:
 - i. Take rest breaks as needed.
 - ii. Progress the number of hours in school (shortened school day)
 - iii. Be given more time to take tests or complete assignments. (All courses should be considered)
 - iv. Receive help with schoolwork (e.g., pre-teaching, outlines, note-taker)
 - v. Reduce time spent on the computer, reading, and writing.
 - vi. Be granted early dismissal from each class to avoid crowded hallways.
 - vii. No standardized testing (e.g., PSSA, SAT) until cleared by treating physician.
 - viii. No band or chorus activities.
2. BrainSTEPS has created a list of academic adjustments that can be referenced for students in remote online learning that can be found here: https://www.brainsteps.net/_corbs/about/BrainSTEPS.Adjustments.Online.Learning.pdf.
 3. Students with persistent symptoms (greater than 4 weeks) and who require assistance to be able to participate fully in school, may be candidates for a 504 plan. A 504 plan will describe modifications and accommodations to help a student return to pre-concussion performance levels. For example, a student recovering from a concussion might receive environmental adaptations, temporary curriculum modifications, and behavioral strategies.¹⁰
 4. In Pennsylvania, BrainSTEPS⁸ teams are available to any secondary school in the Commonwealth. These teams have been developed by the Brain Injury Association of Pennsylvania with funding from the Pennsylvania Department of Health and the Department of Education. BrainSTEPS teams are designed to support the staff, student, parents, or guardians in a return-to-learn after a brain injury. These teams work with all parties to identify and implement appropriate academic support and modifications to manage the student's symptoms and to support their learning needs throughout their secondary school career. The school (e.g., teachers, school counselors, school nurse) and family should monitor the performance of the student closely for 4 weeks after the return to school.⁸ If the return to the classroom causes concussion symptoms to re-occur or if the student demonstrates uncharacteristic performance (e.g., reduced attention span, inability to take tests, acting out in class), the school should initiate a formal referral to the local BrainSTEPS team (www.brainsteps.net).

Step 5: Return to Sport

1. Return-to-sport depends on several factors:
 - a. Student-athletes should not return-to-sport until they have successfully returned to academics.
 - i. Early introduction of symptom-limited aerobic non-contact, low risk physical activity as tolerable may be appropriate following concussion (ie. Walking, stationary biking). This may be implemented at the Athletic Trainer's discretion unless there is a contraindication. This is meant to aid in the rehabilitation of concussion and is separate from the return-to-sport progression.^{2,12}
 - b. Physical exam
 - c. Graded concussion symptom checklist

- d. History of concussion or other brain injury
 - e. Neuropsychological (ie. ImPACT, SCAT5, etc.) testing scores
 - f. Recommendations of the St. Luke's medical staff, treating physician, and/or district athletic trainer.
2. The student-athlete must meet ALL of the following criteria to return-to-sport.
- a. Asymptomatic at rest, in the classroom, and with exertion.
 - b. ImPACT®, SCAT5 and/or other neurological testing scores (when indicated) comparable to baseline and reviewed by the treating physician unless otherwise described by the team physician.
 - c. Written clearance from a physician must be obtained prior to beginning return-to-play protocol.
 - i. If written clearance from a physician does not align with the St. Luke's Concussion Management Protocol, the student-athlete will not be allowed to return-to-sport.
 - ii. The Athletic Trainer has the final say in return-to-play.
 - iii. If a question arises, the final decision for return-to-play would be of the school's Team Physician.

****Notes from outside physicians will not be used to override the St. Luke's protocol.***

3. Progression through the return-to-sport protocol is individualized and will be determined on a case-by-case basis. The speed of progression will be established by collaboration between student-athlete, the St. Luke's Sports Medicine Team and/or the treating physician.
- a. If an athlete returns to play after the typical sport concussion timeline of 2-4 weeks in adolescents 13 and older or 4-6 weeks in children 12 and younger, the athlete may have secondary symptoms that may be a result of being withheld from their sport and normal activities. In these instances, the athletic trainer should consult with the treating physician, team physician, or neurologist to determine the appropriate progression and red flags that may limit progression.
4. A graduated return to play protocol will be utilized. Each step will take, at a minimum, 24 hours unless the treating physician indicates otherwise. Student-athletes must remain asymptomatic or no worsening of symptoms prior to taking the next step. If symptoms return, a 24-hour suspension of progression will take place before resuming the level that the athlete completed without experiencing any signs or symptoms.
- a. If symptoms return during progression, student-athlete should be removed from participation until symptoms resolve.
 - b. If symptoms do not resolve, student-athlete should be referred to the treating physician for re-evaluation.
 - c. If the student-athlete remains at the same step of the graduated return-to-sport protocol for three days, the athlete should be referred to the treating physician for re-evaluation.
5. St. Luke's utilizes the Berlin Consensus Statement from the 5th International Congress on Concussion in Sport² (Each step requiring a minimum of 24-hours):
- a. **STEP 1:** Athlete remains symptom-free, off medication, for a 24-hour period while completing a day of normal cognitive activities (school day, studying for class, and interaction with peers). If no return of symptoms, progress to next step:
 - b. **STEP 2:** Light aerobic exercise (ie Walking, jogging, elliptical or stationary biking), 15-40 minutes in length, keeping the intensity <70% maximum predicted heart rate. The objective is to increase heart rate. If no return of symptoms, progress to next step:
 - c. **STEP 3:** Sport specific drills, 15-40 minutes in length. Drills should be individual (i.e., change of direction, change of pace/intensity, cutting, agility) and exclude all head

impact activities. The objective is to add movement while continuing to increase heart rate. If no return of symptoms, progress to next step:

- d. **STEP 4:** Non-contact training drills may be done individually or with a team. This may include sport specific skills such as passing, shooting, throwing, etc. Progressive resistance training may begin during this phase. If no return of symptoms, progress to next step:
 - e. **STEP 5:** Unrestricted participation in practice or normal training activities. The student-athlete may participate in all team drills, including contact, in practice only. The objective is to restore confidence to the student-athlete and assess functionality of the athlete during play. If no return of symptoms, progress to next step:
 - f. **STEP 6:** Return-to-sport involving normal exertion or game activity.
6. If symptoms persist and unable to complete return-to-learn or return-to-sport protocols follow-up care should be initiated with collaboration with treating physician. Referral may be warranted to Physical Therapy, Neurology, or other concussion-trained specialist.
- a. For High School and Middle School student-athletes with symptoms that persist significantly with conservative treatment, a referral to Neurology may be warranted as determined by the treating physician.

IV. Documentation

1. Each St. Luke's affiliated Athletic Trainer will document at minimum, in their respective EMR system, the following information:
 - a. All initial encounters by the Athletic Trainer for the assessment of concussion.
 - b. All neuropsychological testing (ie. ImPACT, SCAT5, VOMS, BESS, etc.).
 - c. All initial physician referrals and evaluation with any provided office notes.
 - d. Daily progress notes and daily graded symptom checklists.
 - e. Notes by the overseeing physician for any academic accommodations.
 - f. Clearance by the overseeing physician to start the supervised progression through the return-to-play protocol.
 - g. Documentation of each stage of the return to sport protocol, activities performed and athlete status at each stage.
 - h. Clearance by the overseeing physician for unrestricted return-to-sport.

V. Disclaimer Statement

1. This policy and procedure are intended to provide a description of a course of action to comply with legal requirements and/or operational standards. There may be specific circumstances not contemplated by this policy and procedure that may make compliance either unclear or inappropriate. For advice in these circumstances, consult with your Chain of Command, Administrator on Call, Clinical Risk Management, Legal Services, Accreditation and Standards, or Compliance Officer, as appropriate.

VI. References

Resources on Interscholastic Sports Related Concussions and Head Injuries Internet Resources

Centers for Disease Control and Prevention – Concussion Toolkit
http://www.cdc.gov/concussion/HeadsUp/physicians_tool_kit.html
<http://www.cdc.gov/concussion/headsup/pdf/ACE-a.pdf>

http://www.cdc.gov/concussion/headsup/pdf/ACE_care_plan_school_version_a.pdf
http://www.cdc.gov/concussion/headsup/pdf/Concussion_in_Sports_palm_card-a.pdf

National Federation of State High Schools Association- Online “Concussion in Sports” training program.

www.nfhs.org

Brain Injury Association of Pennsylvania (BIAPA)

www.biapa.org

Pennsylvania Athletic Trainers Society (PATS)

www.gopats.org

National Collegiate Athletic Association (NCAA)

www.NCAA.org/health-safety

Pennsylvania Interscholastic Athletic Association (PIAA)

www.piaa.org

Pennsylvania Physical Therapy Association (PPTA)

www.ppta.org

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12. Leddy, J.J., Haider, M., Ellis, M., Willer, B (2018) Exercise is Medicine for Concussion. *Current Sports Med Rep*. 2018 Aug; 17(8): 262–270.

VI. Attachments

Addendum 1a



**Concussion Policy Acknowledge Form
Athlete & Parent/Guardian**

I hereby acknowledge that I have read and understand the St. Luke's Sports Medicine Concussion Policy and Management Guidelines.

Student-Athlete Name Printed: _____ Sport: _____

Student-Athlete Signature: _____ Date ____/____/____

Parent/Guardian Name Printed: _____ Relationship: _____

Parent/Guardian Signature: _____ Date ____/____/____

Addendum 1b



**Concussion Policy Acknowledge Form
Coach**

I hereby acknowledge that I have read and understand the St. Luke's Sports Medicine Concussion Policy and Management Guidelines.

Coach Name Printed: _____ Sport: _____

Coach Signature: _____ Date ____ / ____ / ____

Coach Name Printed: _____ Sport: _____

Coach Signature: _____ Date ____ / ____ / ____

Coach Name Printed: _____ Sport: _____

Coach Signature: _____ Date ____ / ____ / ____

Coach Name Printed: _____ Sport: _____

Coach Signature: _____ Date ____ / ____ / ____

Coach Name Printed: _____ Sport: _____

Coach Signature: _____ Date ____ / ____ / ____

Addendum 1c

**Concussion Policy Acknowledge Form
Athletic Trainer, Athletic Director, Team Physician**



Compliance Certification

Academic Year: _____

School District/Organization: _____

Concussion Management Plan

By signing and dating this form, I hereby acknowledge, on behalf of the institution identified above, that for the 20____ academic year, the attached St. Luke's Sports Medicine Concussion Policy is consistent with state concussion requirements. I acknowledge that I have received and reviewed the St. Luke's Sports Medicine Concussion Policy.

Required Signatures**

Director of Athletics

Print Name:

Title:

Sign:

Date:

Team Physician

Print Name:

Title:

Sign:

Date:

Athletic Trainer

Print Name:

Title:

Sign:

Date:

Athletic Trainer

Print Name:

Title:

Sign:

Date:

Athletic Trainer

Print Name:

Title:

Sign:

Date:

Athletic Trainer

Print Name:

Title:

Sign:

Date:

Athletic Trainer

Print Name:

Title:

Sign:

Date:

Athletic Trainer

Print Name:

Title:

Sign:

Date:

AT-HOME CONCUSSION ImPACT BASELINE TESTING EXPLANATION AND INSTRUCTIONS

As part of the concussion evaluation, St. Luke's University Health Network uses a computerized assessment measure called ImPACT (Immediate Post-Concussion Assessment and Cognitive Testing) to aid in the clinical decision-making process. ImPACT is a computerized neuropsychological assessment of memory, attention, reaction time, processing speed, and post-concussion symptoms. ImPACT provides specific, objective information regarding the injury. ImPACT is only one tool in the multidisciplinary approach to the concussion evaluation. To properly assess post-injury ImPACT results, a baseline ImPACT test must be on file. These tests are regarded as privileged medical information and results are not shared with anyone besides the medical staff, unless requested by your child's treating physician.

AT HOME BASELINE TESTING

The test takes approximately 30-40 minutes to complete. If your school/organization is performing at home ImPACT testing, please read the instructions carefully, as the validity of the ImPACT test depends on them. If you have any questions or need further instruction, please reach out to your athletic trainer.

REMINDERS

When taking the ImPACT baseline test, the environment should be similar to how the athlete would take a post-injury test, should a concussion be suspected or need to be ruled out. To help create this standardization, please follow these instructions:

1. The test should be taken in a quiet, distraction-free environment. This means no earbuds, no cellphone use, etc... during the test.
2. The test should be taken on a computer. If taken on a laptop, do not use the trackpad, instead, PLEASE USE THE MOUSE.
3. Be sure to have a secure internet/WIFI connection.
4. If applicable, the test should be completed before any strenuous exercise or at least 3 hours after strenuous exercise.

If your code will not work, enable pop-ups on your browser. If your test freezes for more than one minute, try refreshing your page. If this does not work, you will have to restart the test. If you do not have a strong WIFI connection, consider using an Ethernet cable or taking the test on a desktop if possible. If a baseline test is deemed invalid, the athletic trainer will have the athlete retake the test.

Part of the test relies on seeing colors. If your child has a color vision deficiency or color blindness and you think it will alter the results of the test, please email the athletic trainers, as we use an alternate baseline concussion test.

STARTING THE ImPACT TEST

1. Open your browser, enter the website: www.impacttestonline.com/testing
2. Contact your St. Luke's Athletic Trainer for your school/organization's access code.
3. Click **VALIDATE**
4. Click the box **SELECT AN ORGANIZATION** and scroll down until you see the name of your school/organization.
5. Click **LAUNCH BASELINE TEST**
6. The test has now started.
 1. When you get to the slide that asks if you would like to skip or enter demographic, click ENTER DEMOGRAPHICS.
 2. Give your best answer for CURRENT POSITION/EVENT/CLASS (ie. point guard in basketball, swimming event(s), flyer/base in cheer, wrestling weight class).

WHEN YOU HAVE FINISHED THE TEST

1. You will see a screen with your information on it and a spot on the bottom to enter your email.
2. Enter an email you have access to. That email will get a copy of the athlete's passport ID.
3. The screen will not change, simply close the browser.

Any questions can be directed to your athletic trainer.

What is a Concussion?

Disclaimer: This handout is for educational purposes only. This is not intended to diagnose, treat, or manage a concussion. Consult with your physician for care if a concussion is suspected or there are any questions and/or concerns.



What is a Concussion?

A concussion is a type of brain injury caused by a force directly or indirectly to the skull, face, neck, shoulders, or other part of the body with or without loss of consciousness that results in the rapid acceleration and deceleration of the brain leading to temporary neurological symptoms. Imaging will not show structural damage and is typically not performed following concussion, unless red flags are present at the treating physician's discretion. A typical sport concussion lasts from 2-4 weeks in

adolescents ages 13 and older, and 4-6 weeks in children 12 and younger. Student-athletes showing signs and symptoms consistent with a concussion will be referred to a physician trained in the management of concussions. To schedule an appointment with a St. Luke's Primary Care Sports Medicine Physician, please consult with your school's Athletic Trainer. If medication is needed, ONLY Tylenol (Acetaminophen) should be used until consultation with treating physician.

Symptoms reported by Athlete:

Headache, pressure in head, don't feel right, feel in a fog, confusion, blurred vision, dizziness, memory loss, ringing in the ears, difficulty concentrating / remembering, nausea and vomiting, sensitivity to light / noise, trouble falling asleep, more emotional / anxiety

Signs observed by coaches/parents:

Appears dazed or stunned, confused about assignment or position, forgets sport plays, moves clumsily, answers questions slowly.

Red Flags

Concern for cervical spine or skull / facial fracture, worsening headache, drowsiness or inability to be wakened, inability to recognize people or places, repetitive vomiting, unusual behavior / confusion / irritable, seizures, weakness or numbness in arms / legs, unsteadiness on feet, slurred speech, retrograde or anterograde amnesia.

****If any red flags or other concerning signs / symptoms are present, the individual should be transported to the Emergency Department.***

1 EARLY PHYSICAL & COGNITIVE REST

Depending on the severity of symptoms, you may need to take a few days off from school. Research shows that in most cases a 24-48-hour rest period followed by a gradual re-introduction to activities of daily living have proven to be beneficial. Ask your doctor or Athletic Trainer about when it would be safe to return to school and resume activities of daily living.

2 GRADUATED RETURN TO LEARN

Communicate a suspected concussion with your school. In some cases, the school will implement academic adjustments while waiting for an appointment with your physician. The physician may prescribe academic accommodations as needed.

3 RETURN-TO-SPORT PROGRESSION

A minimum of 24 hours is required between each stage. If symptoms present, the athlete should wait 24 hours before attempting the previous step that did not cause symptoms. If an athlete remains at the same stage for three days, the athlete should consult with their treating physician.

STAGE 1: Full return to school, asymptomatic off medication, physician clearance required.

STAGE 2: Light aerobic activity (ie. walking/biking). No resistance training. Goal is to increase heart rate.

STAGE 3: Sport-specific drills (ie. running/skating drills). No head impact. Goal is to add movement.

STAGE 4: Non-contact practice (ie. harder training drills/passing drills). May start progressive resistance training. Goal is to add coordination and increased thinking.

STAGE 5: Full contact practice. Goal is to restore confidence and assess functional skills by coaching staff.

STAGE 6: Return to competition.

Addendum 4



The Sports Medicine Department would like to inform you that _____ sustained a concussion on ___ / ___ / ___. The student-athlete will undergo continued follow-up/testing with the Sports Medicine department. The above student-athlete is awaiting an appointment with a physician. Formal academic accommodations may be given to the student athlete by treating physician and those will be forwarded to you when available.

As a department, we wanted to make you aware of this injury and the related symptoms that the student-athlete may experience. Although the student may be attending class, please be aware that the side effects of the concussion may adversely impact academic performance. Any consideration you may provide academically during this time would be greatly appreciated. We will continue to monitor the progress of this student-athlete and anticipate a full recovery. Should you have any questions or require further information, please do not hesitate to contact us.

A concussion can cause a variety of physical, cognitive, and emotional symptoms. Concussions range in significance from minor to major, but they all share one common factor — temporary functional disturbance that could affect academic performance. We would like to inform you that during the next few weeks this student-athlete may experience one or more of these signs and symptoms:

- Headache
- Dizziness
- Light Sensitivity
- Blurred Vision
- Difficulty Concentrating
- Nausea
- Diplopia - Double Vision
- Difficulty Sleeping
- Feeling Sluggish or Groggy
- Balance Problems
- Confusion
- Noise Sensitivity
- Memory Problems

Student-Athlete

Signature

Date

Parent/Guardian

Signature

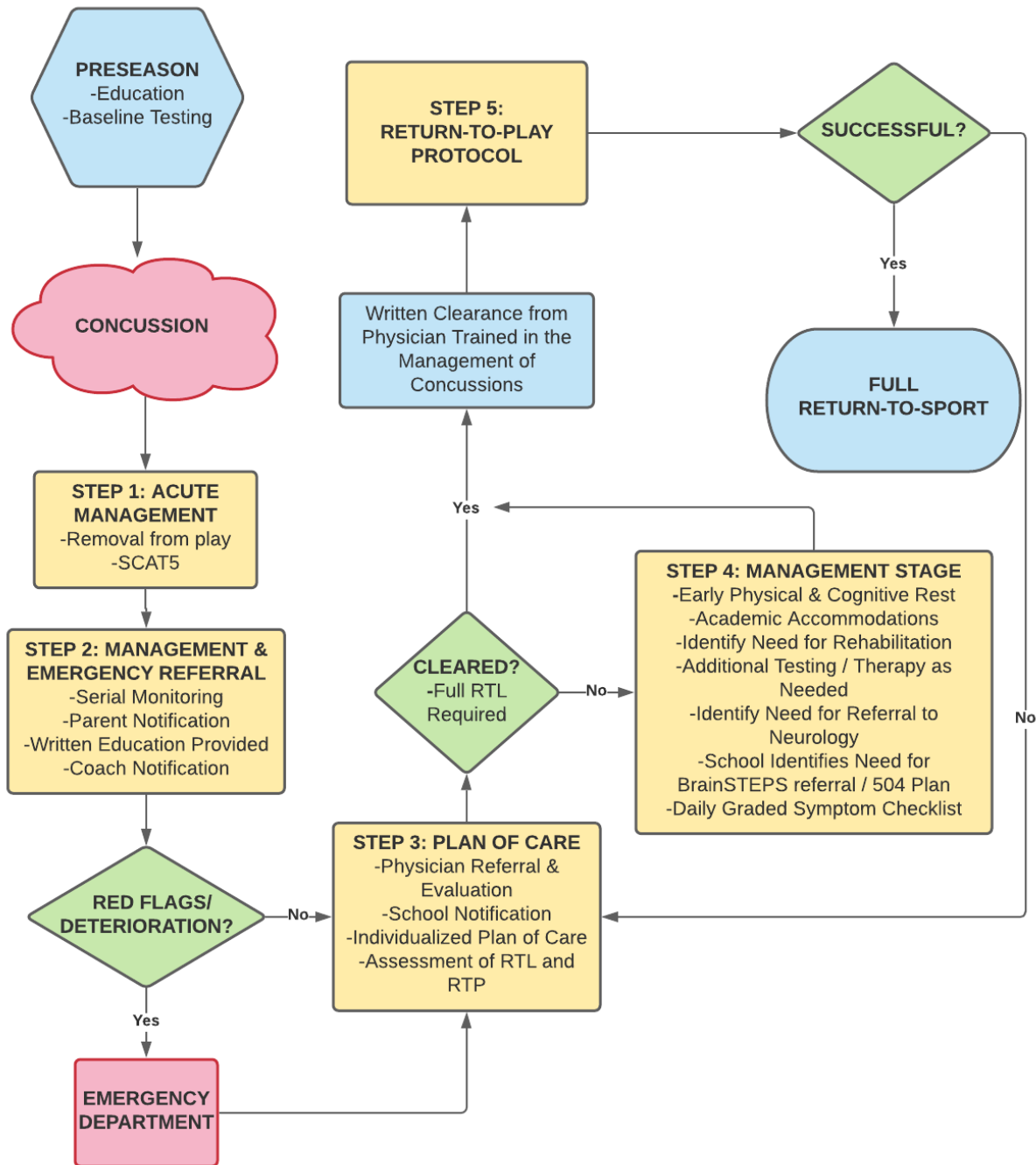
Date

Healthcare Provider

Signature

Date

Addendum 5



* Effective concussion management begins well before the injury occurs. During the preseason, trained staff from St. Luke’s Sports Medicine facilitates educational seminars for athletes, parents, coaches, and athletic trainers.

* St. Luke’s collaborates with parents, coaches, athletic trainers, and school nurses to effectively manage the concussion until the athlete can be safely returned to full physical and cognitive activity.