A.

HEAD INJURY IN SOCCER

FROM SCIENCE TO THE FIELD

Dates: April 21 & 22, 2017

Location: New York City, NY, Marriott Marquis

Mission: Identify, present and disseminate evidence-based medicine, principles, policies and procedures regarding head injury and concussion in the sport of soccer to enhance the health and safety of all players

Vision: create a transformative summit focused on head injury and concussion where all stakeholders (e.g. physicians, athletic trainers/physiotherapists, allied health care providers, scientists, athletes, coaches and administrators) can follow the 5th International consensus on concussion in sport 2017 - Berlin and develop strategy regarding key issues that enhance the health and safety of soccer players.

Objectives:

1. Present and discuss findings and conclusions of 2016 Berlin Consensus meeting on Concussion in Sport on head injury for all sports.
2. Present state of the art principles, concepts, mechanism and novel treatments for head injuries and concussions for all ages, levels of participation and genders for the sport of soccer.
3. Develop and release a plan of communications for the purposes of public and professional education relative to all stakeholders for the sport of soccer.

Co-chairs: Margot Putukian, MD, FACSM; Bert Mandelbaum, MD; George Chiampas, DO, CAQSM; Ruben Echemendia, PhD

Planning Event Chairs: John Gallucci Jr. MS, ATC, PT, DPT; Hughie O'Malley

Program Committee: Jiří Dvořák, MD; Ruben Echemendia, PhD; Larry Lemak, MD; Margot Putukian, MD, FACSM; George Chiampas, DO, CAQSM; Bert Mandelbaum, MD

General Outline of Summit:

April 21 -Day 1

Introductions: Welcome

8:00-8:20 Commissioners Introduction: Welcome
Don Garber, MLS Commissioner
Co-Chair Introductions
Program Committee: George Chiampas, DO, CAQSM; Margot Putukian, MD, FACSM; Ruben Echemendia, PhD; Bert Mandelbaum, MD

I. What We've Learned from Berlin
(Moderator: Ruben Echemendia, PhD)

8:20-8:30 The Berlin Process; Definition of Concussion
Ruben Echemendia, PhD – U.S. Soccer, MLS, and NHL Neuropsychologist

8:30-8:45 Critical Elements of Sideline Screening
Margot Putukian, MD, FACSM – Princeton University Director of Athletic Medicine, U.S. Soccer and MLS Medical Consultant

8:45-9:05 Domains Examined in Post-Injury Clinical Assessment:

a. Cognitive Assessment, Postural Stability, and Role of Baseline Testing
Gary Solomon, PhD – Associate Professor of Neurological Surgery, Orthopaedic Surgery & Rehabilitation, and Psychiatry and Behavioral Sciences, Co-Director of Vanderbilt Sports Concussion Center

b. Oculomotor/Vestibular/Cervical Assessment
Jiří Dvořák, MD – Swiss Concussion Center, Schulthess Clinic, University of Zurich

9:05-9:15 Evidence for Advanced/Novel Tests
Chris Giza, MD – Director of the UCLA Steve Tisch BrainSPORT Program, Specialties-Pediatrics and Neurodevelopmental Disabilities

9:15-9:30 Evidence Underlying Management/Treatment
Ruben Echemendia, PhD – U.S. Soccer, MLS, and NHL Neuropsychologist

9:30-9:45 Physiological Recovery
John Leddy, MD – Clinical Professor and Medical Director, University at Buffalo Concussion Management Clinic

9:45-10:00 Prognostic Factors/Modifiers of Sport Concussion
Gary Solomon, PhD – Associate Professor of Neurological Surgery, Orthopaedic Surgery & Rehabilitation, and Psychiatry and Behavioral Sciences, Co-Director of Vanderbilt Sports Concussion Center

10:00-10:10 Advances in Child Assessment and Treatment of Sport Concussion

Laura Purcell, MSc, MD, FRCPC, FAAP, Dip. Sport Med. – Associate Clinical Professor, Department of Pediatrics, McMaster University

10:10-10:25 CTE/Neurodegenerative Diseases and Sport Concussion

Michael Turner, MB, BS, FFSEM (UK), MD – Medical Director, International Concussion and Head Injury Research Foundation

10:25-10:40 Reducing Risk of Concussion in Sport

Kathryn Schneider, PT, PhD, DipManipPT – Assistant Professor and Clinician Scientist, University of Calgary

10:40-10:55 The Berlin Consensus Document

Jiří Dvořák, MD – Swiss Concussion Center, Schulthess Clinic, University of Zurich

Willem (Winne) Meuwisse, MD – Professor, Sport Medicine Centre, Faculty of Kinesiology Co-Chair, Sport Injury Prevention Research Centre Leader, Brain Injury Initiative, Hotchkiss Brain Institute, University of Calgary, Chair of NHL Health Management Panel

10:55-11:15 Q & A

Break

11:15-11:25

II. Future Directions from Berlin; What's next for soccer?

(Moderator: George Chiampas, DO, CAQSM)

11:25–11:50 What are the Implications of the Berlin Consensus for Soccer at Different Levels of Play? Are There Areas Specific to Soccer That Were Not Covered in Berlin?

Margot Putukian, MD, FACSM – Director of Athletic Medicine, Princeton University, U.S. Soccer and MLS Medical Consultant

Lunch

11:50-12:40

III. Injury Epidemiology & Mechanisms of Injury in Soccer

(Moderator: Elizabeth Pieroth, Psy.D.)

12:40-1:00 High School / Youth

Anthony Kontos, PhD – Director of Research for Sports Medicine Concussion Program, University of Pittsburgh

1:00-1:20 College

John Parsons, PhD – Director, NCAA Sport Science Institute

1:20-1:40 Major League Soccer

Ruben Echemendia, PhD – U.S. Soccer, MLS, and NHL Neuropsychologist

1:40-2:00 European & Other Non-US Data

Jiří Dvořák, MD – Swiss Concussion Center, Schulthess Clinic, University of Zurich

2:00–2:20 Q & A

Break

2:20-2:35

IV. Panel Discussion

2:35-3:35 Athlete, Coach, Referee Panel

(moderator George Chiampas, DO, CAQSM)

Athletes: Taylor Twellman – ESPN Analyst, Retired U.S. Soccer National Team and New England Revolution Player

Jill Loyden– Goalkeeper Coach for Sky Blue FC, Retired U.S. Soccer National Team and Sky Blue FC Player

Coaches: Jim Barlow – Princeton University Head Men's College Coach and Previous U-15 Boys National Team Head Coach, U.S. Soccer

Jesse Marsch – New York Red Bulls Head Coach

April Kater – U-14 Girls National Team Head Coach, U.S. Soccer

Referee: Sandra Serafini – Professional Referee Organization Women's Referee Manager

V. Recognition of Injury

(Moderator: Elizabeth Pieroth, Psy.D.)

Role of Individuals (e.g. Athlete, Coach, Officials and Parents) and Technology in Recognition of Injury

3:35-3:43 Role of Officials

Sandra Serafini – Professional Referee Organization Women's Referee Manager

3:44-3:52 Role of Sensors

Jason Mihalik, PhD, CAT(C), ATC – Co-Director, Matthew Gfeller Sport-Related Traumatic Brain Injury Research Center, University of North Carolina

3:53 -4:01 Role of Spotters

Ira Smith, MD – Head Team Physician, Toronto FC

4:02-4:10 Role of Education

Robert Huggins, PhD, ATC – Vice President of Research and Vice President of Athlete Performance and Safety, Korey Stringer Institute, University of Connecticut

4:11-4:20 Panel Q & A

4:20 – 4:30 Break

VI. Assessment of Injury

(Moderator: Bert Mandelbaum, MD)

4:30-4:40 Sideline, SCAT 5

Steve Broglio, PhD, ATC – Director of Neurotrauma Research Laboratory, University of Michigan

4:40-4:50 Post-Acute and Return to Play

Ira Smith, MD – Head Team Physician, Toronto FC

VII. Management of Injury and Novel/Emerging Technology

(Moderator: Bert Mandelbaum, MD)

4:50-5:00 Clinical vs Physiological Recovery

Chris Giza, MD – Director, UCLA Steve Tisch BrainSPORT program, Specialties-Pediatrics and Neurodevelopmental Disabilities

5:00-5:10 Therapeutic Practical Procedures

John Leddy, MD – Clinical Professor and Medical Director, University at Buffalo Concussion Management Clinic

5:10-5:20 Biomarkers Including Imaging

Chris Giza, MD – Director, UCLA Steve Tisch BrainSPORT program, Specialties-Pediatrics and Neurodevelopmental Disabilities

5:20-5:30 Novel/Emerging Technologies

Gretchen Thomsen, PhD – Researcher, Cedars Sinai

5:30–5:40 Barriers to Assessment in Soccer

Ira Smith, MD – Head Team Physician, Toronto FC

5:40-6:00 Learning from Other Sports: The Rugby Experience

Michael Keating, ATC – Director of Medical Services, USA Rugby

April 22- DAY 2

Welcome to Day 2

8:00-8:10 Welcome/Announcements

Co-Chairs: Margot Putukian, MD, FACSM; Bert Mandelbaum, MD; George Chiampas, DO, CAQSM; Ruben Echemendia, PhD

VIII. Heading in Football (Soccer); What Do We Know?

(Moderator: Margot Putukian, MD, FACSM)

How Often Does It Occur?

8:10-8:22 Biomechanics of Heading
Donald Kirkendall, PhD – Duke University Sports Science Institute

8:23-8:35 Review of the Prospective Literature Youth – College
Thomas Kaminski, PhD, ATC, FNATA, FACSM – Co-Director, Athletic Training Research Laboratory, University of Delaware's Human Performance Laboratory

8:36-8:48 MLS Data
Ruben Echemendia, PhD – U.S. Soccer, MLS, and NHL Neuropsychologist

8:49-9:01 College Data
John Parsons, PhD – Director, NCAA Sport Science Institute

Acute & Chronic Effects of Heading

9:02-9:14 Soccer and Neurocognitive Dysfunction: What Does Science Tell Us?
Gary Solomon, PhD – Associate Professor of Neurological Surgery, Orthopaedic Surgery & Rehabilitation, and Psychiatry and Behavioral Sciences, Co-Director of Vanderbilt Sports Concussion Center

CTE: What Do We Know?

9:15-9:27 Clinical Findings
Michael Turner, MB, BS, FFSEM (UK), MD – Medical Director, International Concussion and Head Injury Research Foundation

9:28-9:40 Pathological Findings
Rudolph Castellani, MD, Director, WMed Center for Neuropathology, Western Michigan University

9:41-9:53 Evidence for or Against Restrictions on Heading
George Chiampas, DO, CAQSM – Chief Medical Officer, U.S. Soccer, Northwestern Memorial Hospital

9:54-10:06 Scientific Findings Regarding the Use of Headgear in Soccer
Ryan Tierney, PhD, ATC- Associate Professor of Kinesiology, Temple University

10:07-10:19 Game Rules and Injury Prevention
Ira Smith, MD – Head Team Physician, Toronto FC

10:20-10:40 Q &A

IX. Emerging Issues / Questions to Answer Panel

10:40-11:30
(moderator John Gallucci Jr. MS, ATC, PT, DPT)

George Chiampas, DO, CAQSM – Chief Medical Officer, U.S. Soccer, Northwestern Memorial Hospital
Sunil Gulati – President, U.S. Soccer
Jim Parsons, PhD – Director, NCAA Sport Science Institute
Thomas Faro – Executive Director, Michigan State Youth Soccer Association, Chair of USYS Risk Management Committee
Lynn Berling Manuel – CEO, National Soccer Coaches Association of America (NSCAA)
Robin Harris – Executive Director, Ivy League
Michael Keating, ATC – Director of Medical Services, USA Rugby

Conclusion of Open Session

11:30

B.

Major League Soccer

Subject:	Head Injury/Concussion Evaluation and Management Protocol
Effective Date:	8 February 2018
Rescinds:	N/A
Amends:	N/A
Distribution:	All Clubs and venues
Reference:	**MLS 404**

Medical Operations

1. Purpose

The identification and treatment of head injury and concussion are important in soccer, which has led MLS to develop empirically-based approaches to the identification, evaluation, and management of these injuries.

2. Policy

All Medical Providers shall adhere to the Major League Soccer (MLS) Head Injury/Concussion Evaluation and Management Protocol (Protocol). This Protocol, as approved by MLS, was developed by the MLS Concussion Program Committee, which is a multidisciplinary medical group that is charged with developing comprehensive approaches to the identification, evaluation, and management of head injury and concussion in MLS Players.

3. Protocol

The objective of this Protocol is to establish the framework for Club medical staffs to provide state of the art evaluation and management of MLS Players who are suspected of having a concussion or who are diagnosed with a concussion.

The Return to Participation ("RTP") decision after a concussion is a complex process. The RTP decision remains predominantly a clinical process that should be **individualized**. The signs and symptoms of a concussion are dynamic and evolve over time.

Education:

MLS understands the critical role education plays in the realm of concussion identification and management. All Players, technical staff, and medical staff are required to view an educational video each pre-season. The video is also reviewed on an annual basis by the MLS Concussion Program Committee and updated as needed to reflect changes in the science and highest standards in the practice of concussion care.

Concussion Defined:

MLS defines "concussion" using the criteria set forth by the Concussion in Sport Group (2017):

"Sport related concussion [(SRC)] is a traumatic brain injury induced by biomechanical forces. Several common features that may be utilised in clinically defining the nature of a concussive head injury include:

- *SRC 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.*

- *SRC 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.*
- *SRC 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.*
- *SRC 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 (eg, psychological factors or coexisting medical conditions)."

Identification of Concussion - Signs & Symptoms of Concussion may include:

Physical	Cognitive	Emotional	Sleep
Headache Pressure in head Nausea or vomiting Dizziness Blurred vision Balance problems Sensitivity to light Sensitivity to noise Fatigue or low energy	Feeling like in a fog Feeling slowed down Don't feel right Difficulty concentrating Difficulty remembering Confusion	Nervous or Anxious More emotional Irritability Sadness	Drowsiness Trouble falling asleep

Acute Evaluation/Diagnosis

Players who are suspected of having sustained a concussion will be evaluated immediately on the field of play by Club medical staff, including evaluation of the "ABCs" (Airway, Breathing, Circulation) and the on-field evaluation components of the MLS Modified SCAT 5 (e.g. Red Flags, Observable Signs, Maddocks Questions, Glasgow Coma Scale, Cervical Spine Assessment),

If a Player is diagnosed with a concussion, or the suspicion of a concussion remains, after the on-field evaluation has been completed, the Player must be removed from play. After the Player is removed from play he will be evaluated by Club medical staff using, at minimum, the MLS Modified SCAT 5 in a distraction-free environment. The Team Physician or Venue Medical Director ("VMD") shall have the sole responsibility of making a concussion diagnosis and, in addition to the MLS Modified SCAT 5, should also perform whatever additional evaluation required to make the most accurate diagnosis. If the Modified SCAT 5 cannot be completed for clinical reasons (e.g. Player is too symptomatic to undergo testing), the Modified SCAT 5, and additional neurological evaluation if needed, shall be completed as soon as possible.

Any MLS Player diagnosed with a concussion shall be subject to the current Protocol in order to return to participation.

Identification of possible concussion is a multifaceted process that involves medical staffs, officials, MLS spotters (see section 5 below) and the Players themselves. The following observable signs indicate a high likelihood of a diagnosis of concussion following a direct or indirect blow to the head:

- Loss of consciousness / lying motionless on field.
- Observation of seizure activity such as decerebration positioning.
- Significant Ataxia/motor incoordination such that the athlete cannot walk in a balanced and unassisted manner.

If the Player exhibits any of these signs he will not be allowed to reenter the match.

Understanding that concussion symptoms or signs may not always be present within the first few hours of an inciting impact, any Player who undergoes the MLS Modified SCAT 5 and is not diagnosed with a concussion shall be evaluated again serially, at the very least within 24 hours of the initial suspicion of injury.

Medical Management

Management of a concussion begins with an initial brief period (e.g., 24-48 hours) of relative cognitive and physical rest. The amount of time a Player should rest, and to what degree, will vary depending on each Player's presentation, and shall be determined by the Team Physician after a comprehensive neurological evaluation. Given the evolving nature of concussion, exertional provocation should not begin for 24 hours post injury.

Once the Player has experienced significant concussion-related symptom improvement, day-to-day activities may be gradually introduced under the guidance of his Team Physician as long as the introduction of activities does not elicit new concussion-related symptoms or significant exacerbation of existing concussion symptoms (e.g., introducing walking, reading, computer use). If there is no exacerbation of concussion-related symptoms or emergence of new symptoms, the Player may begin progression through the graded RTP process. The progression through the graded RTP process shall be under the direction of the Team Physician. At all times, the Player shall be monitored for a re-emergence or exacerbation of concussion-related symptoms during the graded RTP process. It may be useful to serially monitor the symptoms post-diagnosis using MLS Modified SCAT 5.

In accordance with current consensus guidelines, there is no mandatory period of time that a Player must be withheld from full participation following the onset of a concussion. However, at minimum, a Player MUST be free of concussion-related symptoms at rest and at levels of exertion consistent with competitive play, and determined to be at his pre-injury neurocognitive and neurological baseline. Taking these conditions into account, the precise timing of return to full participation is determined by the Player's Team Physician.

Neuropsychological Protocol

All Players in MLS shall undergo baseline neuropsychological testing prior to engaging in full contact play. Typically, this testing occurs prior to the start of the season. At present, the baseline evaluation consists of ImPACT and the Modified SCAT 5 (via X2 Biosystems ICE iPad application). Team Consulting Neuropsychologists are to administer or supervise the administration of ImPACT.

All Players diagnosed with a concussion shall be referred to the Team's Consulting Neuropsychologist (as defined in MLS Policy 403) for a post-concussion evaluation **prior to return to full contact play**. The evaluation, and the timing of such evaluation, within the RTP progression is under the ultimate and absolute authority of the Team Physician and takes into consideration the Player's history, recovery, and the specific purpose for the neuropsychological evaluation, if other than to aid in the RTP decision. The post-concussion evaluation will consist of a clinical interview, ImPACT and the MLS Paper & Pencil Battery. At those times when the team is on the road, the opposing Team Consulting Neuropsychologist should be notified to conduct the post-injury evaluation and administer the post-injury test battery. The test data will then be electronically transferred to the home Neuropsychologist for interpretation and consultation with the home Team Physician.

Players who undergo post-injury neuropsychological assessment shall be re-evaluated by the Team's Consulting Neuropsychologist at the start of the next season with ImPACT and Paper & Pencil tests to recalibrate the baseline, since the original baseline may no longer be valid.

Neuropsychologist Communication with Teams

Baseline test data should not be shared with team personnel unless a concussion occurs and baseline scores are being compared to post-injury scores.

If a Player is evaluated post-injury the results of the evaluation will be communicated with team medical staff both verbally and in writing via a brief (one to two paragraphs) written report. The focus of the report will be an indication of Player symptoms (if any), concussion history, and an interpretation of whether the Player appears to have reached his neurocognitive baseline.

A Player has the right to be given feedback about his test results and the Team Consulting Neuropsychologist should provide that feedback if asked. However, it should be clear to the Player that the RTP decision is made by the Team Physician and not by the Team Consulting Neuropsychologist, Athletic Trainers, or any other medical staff member. If a Team Consulting Neuropsychologist provides feedback that a Player has not reached baseline levels of functioning and the Team Physician makes the decision to return the Player to play despite being notified of this limitation, the League Medical Office and League Neuropsychologist must be notified immediately in writing

Team Physician Authority

The Team Physician has the ultimate and absolute authority to decide when a Player should be removed for evaluation and whether that Player is fit to return to play. Before the Player returns to play, the Team Physician will sign off on their return through the X2 ICE iPad applications. The Team Physician's authority in this regard shall not be challenged by team coaching or administrative staff.

During an MLS match the Team Physician or VMD shall have absolute authority in the diagnosis of concussion. (See MLS Policy 405)

Graded Return to Participation Example:

(1) Rest (cognitive and physical).
(2) Light aerobic exercise (e.g., stationary bicycle).

(3) Moderate intensity aerobic exercise.
(4) Sport-specific training (ball handling, passing, light running, NO HEADING).
(5) Non-contact training drills, including full exertion interval training (may start resistance training).
(6) Full contact training with heading.
(7) Return to competition (game play).

Progression from one level to the next is determined by the Team Physician after evaluation of the player. If symptoms re-emerge or are exacerbated at any level, the Player should stop the activity and begin with the previous step after returning to his baseline symptoms (if any).

5. Spotter Program

Injury Identification.

Head injuries in soccer often occur at high speeds and sometimes with obstructed line of sight for team medical staff. MLS has implemented programs to provide Club medical staff with technological assistance to assist with early detection of the injury. These programs include video review and league spotters.

When contact occurs that leads to suspicion that a concussion may have occurred, the video feed will be "clipped" and sent to the Club medical staff who can view the feed on an iPad that is kept at the 4th officials table during the match.

Designated observers or spotters are medical personnel who have been trained as league spotters and are tasked to provide an "extra set of eyes" for the Club medical staff. They will review live video feeds (with rewind capabilities) to observe for any visible signs of concussions. If a sign is detected, the spotter will relay the observation to medical staff along with a video clip of the incident. The role of the spotter is to aide in the identification of a possible injury. They do not diagnose concussion and are not authorized to stop the game or remove a Player from play for evaluation. Those decisions are made solely by the Team Physician or VMD.

6. References

Echemendia et al., (2017). The Sport Concussion Assessment Tool 5th Edition (SCAT5). *British Journal of Sports Medicine.* **0**:1–3. doi:10.1136/bjsports-2017-097506.

McCrory et al. (2017). Consensus statement on concussion ins sport; the 5th international conference on concussion in sport held in Berlin, October 2016. *British Journal of Sports Medicine*, **0**:1–10. doi:10.1136/bjsports-2017-097699

Strict compliance with the rules, regulations and procedures described in this Manual is critical to the successful operation of MLS matches, Clubs and the League.

Failure to comply to the requirements of the Manual will result in the imposition of discipline by the League.

This Manual is confidential and is intended solely and exclusively for the internal use of MLS and Club personnel. Under no circumstances should the Manual be shared externally without prior written permission from the League Office.

MLS reserves the right to revise this Manual at any time at its sole and absolute discretion.

C.

U.S. SOCCER RECOGNIZE 2 RECOVER CONCUSSION INITIATIVE GUIDELINES

I. CONCUSSION EDUCATION FOR COACHES, REFEREES, ATHLETES & PARENTS AND/OR LEGAL GUARDIANS

A. General: Available Resources

1. The U.S. Soccer sports medicine page http://www.ussoccer.com/about/federation-services/sports-medicine) will include:

   a. The concussion overview video

   b. Links to the various CDC resources

   c. Link to the SCAT3 and Child SCAT3 cards

   d. A link to the Sports Neuropsychology Society available on the U.S. Soccer Website (http://www.sportsneuropsychologysociety.com/find-a-doctor/)

   e. Updated concussion diagnosis and management information

2. Implementing Members will include these links and information on their websites and recommend that their respective members do so as well.

3. Other Organization Members are encouraged to include these links and information on their websites and to recommend that their respective members do so as well.

B. Referee Education

1. Licensed referees

   a. On an annual basis, all referees licensed through the U.S. Soccer system will be required to review the concussion video as well as concussion information/protocols which will be made part of course materials.

   b. Referee newsletters will include concussion information and updates.

2. Unlicensed referees

   a. Implementing Members who utilize referees not licensed through the U.S. Soccer system will require that such referees, on an annual basis, confirm that they have reviewed the concussion video as well as concussion information/protocols available on the U.S. Soccer sports medicine page.

b. U.S. Soccer and the Implementing Members recommend that all Organization Members who utilize referees not licensed through the U.S. Soccer system require that such referees, on an annual basis, confirm that they have reviewed the concussion video as well as concussion information/protocols available on the U.S. Soccer sports medicine page.

C. Coaching Education

1. Licensed coaches

a. On an annual basis, all coaches licensed through the U.S. Soccer system will be required to review the concussion video as well as concussion information/protocols which will be made part of course materials.

b. Coaching newsletters will include concussion information and updates.

2. Unlicensed coaches

a. Implementing Members who utilize coaches not licensed through the U.S. Soccer system will require that such coaches, on an annual basis, confirm that they have reviewed the concussion video as well as concussion information/protocols available on the U.S. Soccer sports medicine page.

b. U.S. Soccer and the Implementing Members recommend that all Organization Members who utilize coaches not licensed through the U.S. Soccer system require that such coaches, on an annual basis, confirm that they have reviewed the concussion video as well as concussion information/protocols available on the U.S. Soccer sports medicine page.

D. Parent and Legal Guardian Education

1. U.S. Soccer and each of the Implementing Members will direct parents and/or legal guardians to the concussion video, information and links on their respective websites.

2. U.S. Soccer and each of the Implementing Members will encourage and recommend that all Organization Members encourage, parents and/or legal guardians of all youth players to become informed on the issue of concussion symptoms, diagnosis and management.

3. U.S. Soccer and each of the Implementing Members recommend and encourage all Organization Members to recommend, that parents and/or legal guardians of all youth players discuss the subject of concussions with

their children-players and the need to be candid about any injury they may sustain.

4. For players on Youth National Teams and Development Academy teams, U.S. Soccer will require that parents and/or legal guardians of such players acknowledge annually that they have reviewed and understand the concussion video and parent information on concussion symptoms, diagnosis and management and that they have discussed these issues and the need to be candid with coaches and referees about any injury they may sustain with their players.

5. U.S. Soccer recommends to all Organization Members and the Implementing Members recommend to their members that they require that parents and/or legal guardians of youth players to acknowledge annually that they have reviewed and understand the concussion video and parent information on concussion symptoms, diagnosis and management and that they have discussed these issues and the need to be candid with coaches and referees about any injury they may sustain with their players.

E. Player Education

1. U.S. Soccer and each of the Implementing Members will direct players to the concussion video, information and links on their respective websites.

2. U.S. Soccer and each of the Implementing Members will encourage and recommend that all Organization Members encourage all youth players to become informed on the issue of concussion symptoms, diagnosis and management.

3. U.S. Soccer encourages and recommends that all Organization Members encourage all youth players to be candid with their parents and/or legal guardians, coaches and referees about any injury they may sustain.

4. For players on Youth National Teams and Development Academy teams over the age of 13, U.S. Soccer will require that such players acknowledge annually that they have reviewed and understand the concussion video and player information on concussion symptoms, diagnosis and management.

5. U.S. Soccer recommends to Implementing Members and the Implementing Members recommend to their members that they require youth players over the age of 13 to acknowledge annually that they have reviewed and understand the concussion video and player information on concussion symptoms, diagnosis and management and that they understand the need to be candid with parents and/or legal guardians, coaches and referees about any injury they may sustain.

II. MEDICAL PERSONNEL

A. Youth National Teams and Development Academy Teams

1. U.S. Soccer will continue to require a Health Care Professional (ATC) knowledgeable in the diagnosis and management of concussions be present for all youth National Team games.

2. The U.S. Soccer Development Academy will require all clubs to have a Health Care Professional (ATC) knowledgeable in the diagnosis and management of concussions present for all Academy home games at every Academy age group (U-13/14, U-15/16, and U-17/18), beginning January 1, 2016.

   a. This will include any "friendlies" or approved outside competitions that are hosted by the Development Academy club at any of their home venues.

B. Organization Members

1. U.S. Soccer recommends that an adequate number of health care providers (HCP) be present for all "major youth tournaments" and accessible to coaches, referees and athletes as needed during play.

   a. For this purpose, a "major youth tournament" is intended to mean

      (1) a tournament played over multiple days,

      (2) where age-group-based champions will be determined,[1] and

      (3) in which 64 or more teams (excluding teams U10 and younger) are entered.

   b. The HCP should be a licensed health care professional such as an athletic trainer certified (ATC), or a physician (MD/DO), with a skill set in emergency care and sports medicine injuries and with knowledge and experience related to concussion evaluation and management.

   c. Each "major youth tournament" hosting entity should collaborate and communicate with an HCP, if available, on an overall emergency action plan and discuss the management of environmental injuries, injury prevention, head injury management and return to play matters.

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[1] A "major youth tournament" does not include regular league play or non-league matches.

2. Implementing Members recommend that each of their members comply with items 1.a.-c. above.

III. CONCUSSION MANAGEMENT

A. Baseline Testing

1. U.S. Soccer will continue to require baseline testing for all Youth National Teams.

2. The U.S. Soccer Development Academy will require baseline testing for all Development Academy teams.

3. For the Implementing Member and other Organization Members, though not a recommendation, U.S. Soccer will note that:

   a. Baseline testing is another tool that is available for concussion diagnosis and management.

   b. The use of neuropsychological baseline testing such as ImPact (https://www.impacttest.com) or comparable testing systems utilized by local HCPs.

   c. All Organization Members and their members are encouraged to seek out local sports medicine programs that offer accessible and cost effective neurocognitive testing for both baseline and post injury evaluations.

   d. The results should be interpreted and used only as an additional tool for the management and return to play. These tools should be used by HCPs who have knowledge and expertise in concussion management.

4. Implementing Members will include information about baseline testing as a tool for concussion diagnosis and management on their respective websites.

B. Assessment of Players

1. Youth National Teams and Development Academy Teams -- Games

   a. The U.S. Soccer National Teams and Development Academy will have a qualified HCP on the sidelines during games.

   b. Any player who sustains a significant blow to the head or body, who complains about or is exhibiting symptoms consistent with having suffered a concussion or is otherwise suspected of having sustained a concussion will be evaluated on the sideline by the HCP.

c. The HCP will perform SCAT3 and modified BESS to evaluate players on the field/sideline.

d. Unless the HCP present determines that the player has not suffered a concussion, the player will not be permitted to return to play until the player has successfully completed the graduated return-to-play ("RTP") protocol described below and has been cleared to RTP by a physician.

(1) No coach shall permit a player who has been removed from a game for a concussion assessment to RTP until cleared to do so by an on-site HCP.

(2) If a coach seeks to allow a player who been removed from a game for a concussion assessment <u>and</u> who has not been cleared to RTP by the on-site HCP to re-enter the game, the referee shall allow the player to return to the field <u>but</u> shall

(a) <u>not</u> restart play,

(b) direct the player to leave the field of play and

(c) direct the coach to remove the player and select a substitute.

(3) If a coach seeks to allow a player to re-enter the game who been removed from a game for a concussion assessment <u>and</u> who has not been cleared to RTP by the on-site HCP, the referee shall issue a warning to the coach. If a coach persists in in seeking to allow such player to re-enter the game after having been issued a warning, the referee shall be entitled to take such other disciplinary measures as are permitted.

2. Youth National Teams and Development Academy Teams -- Practice

a. Any player who, during practice, sustains a significant blow to the head or body, who complains about or is exhibiting symptoms consistent with having suffered a concussion or is otherwise suspected of having sustained a concussion must be evaluated by an HCP before the player will be allowed to return to practice.

b. An HCP, if present on-site, will perform SCAT3 and modified BESS to evaluate players on the field/sideline.

c. Unless an HCP determines that the player has not suffered a concussion and clears the player to RTP, the player will not be permitted to return to practice or play until the player has

successfully completed the graduated RTP protocol described below and has been cleared to RTP by a physician.

3. U.S. Soccer Recommendations for Implementing Members and Organization Members – Games Where an HCP is Present

a. U.S. Soccer recommends to Implementing Members and all Organization Members that, where an HCP is present at games, any player who sustains a significant blow to the head or body, who complains about or is exhibiting symptoms consistent with having suffered a concussion or is otherwise suspected of having sustained a concussion, must be evaluated on the sideline by the on-site HCP.

b. The on-site HCP will perform SCAT3 or Child SCAT 3, as applicable, and modified BESS to evaluate players on the field/sideline.

c. Unless the on-site HCP determines that the player has not suffered a concussion, the player will not be permitted to return to play until the player has successfully completed the graduated RTP protocol described below and has been cleared to RTP by a physician.

(1) No coach shall permit a player who has been removed from a game for a concussion assessment to RTP until cleared to do so by an on-site HCP.

(2) If a coach seeks to allow a player who been removed from a game for a concussion assessment and who has not been cleared to RTP by the on-site HCP to re-enter the game, the referee shall allow the player to return to the field but shall

(a) immediately stop play,

(b) direct the player to leave the field of play and

(c) direct the coach to remove the player and select a substitute.

(3) If a coach seeks to allow a player to re-enter the game who been removed from a game for a concussion assessment and who has not been cleared to RTP by the on-site HCP, the referee shall issue a warning to the coach. If a coach persists in seeking to allow such player to re-enter the game after having been issued a warning, the referee shall be entitled to take such other disciplinary measures as are permitted.

4. U.S. Soccer Recommendations for Implementing Members and all Organization Members – Games and Practices Where No HCP is Present

a. U.S. Soccer recommends to the Implementing Members and all Organization Members that where no HCP is present at a game or practice, any player who sustains a significant blow to the head or body, who complains about or is exhibiting symptoms consistent with having suffered a concussion or is otherwise suspected of having sustained a concussion, must be evaluated by an HCP before the player will be allowed to return to practice or play.

(1) No coach shall permit a player who has been removed from a game for a concussion assessment to RTP until cleared to do so by an HCP.

(2) If a coach seeks to allow a player who been removed from a game for a concussion assessment to re-enter the game, the referee shall allow the player to return to the field but shall

(a) immediately stop play,

(b) direct the player to leave the field of play and

(c) direct the coach to remove the player and select a substitute.

(3) If a coach seeks to allow a player to re-enter the game who been removed from a game for a concussion assessment, the referee shall issue a warning to the coach. If a coach persists in seeking to allow such player to re-enter the game after having been issued a warning, the referee shall be entitled to take such other disciplinary measures as are permitted.

b. Unless an HCP determines that the player has not suffered a concussion and clears the player to RTP, the player will not be permitted to return to practice or play until the player has successfully completed the graduated RTP protocol described below and has been cleared to RTP by a physician.

5. Implementing Members

a. The Implementing Members accept the recommendations of U.S. Soccer set forth in items 3 and 4 above and recommend that each of their respective members follow such recommendations as well.

C. Return To Play (RTP) Protocol

1. Youth National Teams and Development Academy Teams

a. For any player removed from practice or play who has been diagnosed as having suffered a concussion, the player will not be permitted to return to practice or play until the player has successfully completed a graduated RTP protocol under the guidance of an HCP.

b. The graduated RTP protocol will consist of at least the following steps:

(1) the player must be symptom free at rest for 24 hours before commencing the protocol;

(2) the player must be symptom free after moderate activity for 24 hours;

(3) the player must be symptom free after heavy activity for 24 hours;

(4) player will retake baseline tests (SCAT3, BESS, and imPACT);

(5) neuropsychologists must review and interpret impact test versus baseline; and

(6) HCP must confirm that the player has completed the RTP process and a physician must make the final RTP decision.

2. U.S. Soccer Recommendations for Implementing Members and all Organization Members

a. U.S. Soccer recommends that Implementing Members and all Organization Members follow the graduated RTP protocol (not including steps 1.b. (4)-(5) unless the player has a baseline test and access to a neuropsychologist).

3. Implementing Members

a. The Implementing Members accept the recommendation of U.S. Soccer set forth in item 2 above and recommend that each of their respective members follow such recommendation as well.

D. U.S. Soccer Development Academy Concussion Monitoring

1. Although not a requirement, U.S. Soccer hopes to incorporate its Electronic Medical Records system (EMR) into the Development Academy program which will have the ability to track injury incidence including concussions.

IV. SUBSTITUTION RULES

A. U.S. Soccer Youth National Teams

1. Youth National Teams will continue to be bound by the substitution rules of the events in which they participate.

B. Development Academy

1. If a player suffers a significant blow to the head, is suspected of having suffered a concussion or has an apparent head injury during the course of a game, the club must remove the player from the game for a medical evaluation by a HCP knowledgeable in the diagnosis and management of concussions.

2. A substitution for the evaluation of the concussion/head injury will not count against the team's total number of allowed substitutions and substitution moments in the Development Academy game.

3. If the player with the suspected head injury has received clearance from the HCP to return to the game, the player may re-enter at any stoppage of play.

4. The evaluated player must replace the original substitute; this medical concussion substitution will NOT count as a substitution or a substitution moment.

5. The player that was temporarily substituted into the game for the player with the suspected head injury will be considered an available substitute and permitted to re-enter the game as a standard substitute per Development Academy rules.

6. Note that any cautions assessed to the substituted player will carry with that player throughout the remainder of the game, any red card to the substitute would apply to the team and the team would be required to utilize a substitution (if available) for the player with the suspected head injury to replace a different player.

C. U.S. Soccer Recommendations for Implementing Members and all Organization Members

1. U.S. Soccer recommends that, to the extent Implementing Members and other Organization Members and their members do not allow unlimited substitutions in connection with any games or tournaments, they follow the new Development Academy substitution rules set forth in B.1.-6. above.

D. Implementing Members

1. The Implementing Members accept the recommendation of U.S. Soccer set forth in item C. above and recommend that each of their respective members follow such recommendation as well.

V. HEADING

A. U.S. Soccer Recommendations

1. U11 and younger.

   a. U.S. Soccer recommends that players in U11 programs and younger shall not engage in heading, either in practices or in games.

2. U12 and U13.

   a. U.S. Soccer further recommends for players in U12 and U13 programs, that heading training be limited to a maximum of 30 minutes per week with no more that 15-20 headers per player, per week.

3. All coaches should be instructed to teach and emphasize the importance of proper techniques for heading the ball.

B. Implementing Members

1. The Implementing Members accept the recommendations of U.S. Soccer set forth in item A. above and recommend that each of their respective members follow such recommendations as well.