



## SSO Synchro-specific Concussion Guidelines, 2018

These guidelines were developed from the latest Consensus Statement by the Concussion in Sport Group (McCrory et al., 2017) and research from the University of Toronto Concussion Lab. They are intended for use by synchronized swimming coaches and officials to assist in recognizing and managing a concussion injury. **They are not intended to take the place of direct advice from a medical professional. When in doubt, contact a medical professional.**

### 1. SSO Removal-from-sport Protocol

#### What to do if you suspect a concussion?

1. Immediately remove athlete from the pool. Remove cap and goggles.
2. Go through a brief symptom checklist:
  - Headache (differentiate between headache and pain at the impact site)
  - Nausea
  - Dizziness
  - Confusion
  - Light and noise sensitivity
  - Balance problems
  - Feeling “not right”
  - Please see the attached Concussion Recognition Tool (Appendix A) for more
3. If athlete has any of these symptoms, cease all activity immediately and inform lifeguard. Call parent or guardian to pick up the athlete and advise they should be taken to see a medical professional\* immediately.
4. Remain with the athlete until discharged to a parent, guardian or other trusted adult or EMS. For swimmers over 18 years of age, contact their emergency contact person;
5. Complete facility incident report and SSO Injury Tracker.
6. If athlete does not have any symptoms, allow them to remain poolside but not actively engaged in activity. Continue to monitor the athlete for symptoms every 10-15 minutes. Symptoms can set in gradually over time.
7. If athlete has no symptoms at the end of the training session, inform the parent or guardian that an impact occurred and advise them to continue monitoring the athlete

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\* If an athlete has a suspected concussion, it is the parent or guardian's responsibility to take the athlete to see a medical professional immediately. This includes a family physician, pediatrician, emergency room physician, sports-medicine physician, neurologist or nurse practitioner. Documentation from any other source will not be acceptable.



for symptoms at home. If symptoms develop at any point, the athlete should be taken to a medical professional.

**If the athlete loses consciousness at any time, immediately remove the athlete from the pool and inform lifeguards. Conduct appropriate emergency procedures.**



## 2. SSO Synchro-specific Concussion Return-to-sport Protocol

Each stage should be performed sequentially. Medical clearance\* is required to progress from Stage 1 to Stage 2. Within each stage, activity should be introduced and increased gradually. The athlete should be symptom-free for at least 24 hours before progressing to the next stage. **If symptoms return at any time, revert back to the previous stage until symptom-free for at least 24 hours.** Every concussion is different; therefore, each synchronized swimmer may move through the protocol at a different pace. Communication between the coaching staff and the healthcare provider(s) in charge of the athlete's care is important and should be emphasized. A sample Return to Synchro Concussion Progress Tracker form is attached (Appendix B).

Adolescent athletes may take longer to return to full activity. **The Concussion in Sport Group recommends that student-athletes make a full return to school before starting a return to sport protocol.**

### Stage 1 **Limited Physical and Cognitive Activity**

- Physical and cognitive rest
- Avoid exposure to bright lights and loud noises
- Avoid all use of screens (phones, computers, tablets, televisions, etc.)
- Perform passive flexibility and breathing exercises.

## Medical Clearance to Exercise

### Stage 2 Light Aerobic Exercise

- Begin re-introducing **light** physical activity. Keep cognitive load low (e.g. no learning of new routines). Very limited water time, no inversions
- Perform aerobic activity up to 70% of maximum heart rate, avoiding excessive head movement (i.e., no shaking or extensive bouncing of the head, no sharp head movements). Start with 15 minutes and gradually increase duration of activity
  - Walking
  - Stationary bicycle
  - Kick with a board (cease if aggravates the neck)
- Continue to avoid bright light and loud noise. Wear sunglasses and earplugs to the pool when attending practice

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\* Medical clearance to exercise must be provided by a medical professional. This includes a family physician, pediatrician, emergency room physician, sports-medicine physician, neurologist or nurse practitioner. Documentation from any other source will not be acceptable.



- Limit use of screens (<30 min/day)
- Continue passive flexibility exercises. Re-introduce active flexibility and extension exercises.

### **Stage 3 Synchro-specific Exercise**

- Re-introduce sport specific skills. Begin to increase cognitive load
- Continue aerobic activity, gradually increasing the duration and intensity, allow some head movement
  - Jogging
  - Swimming (all strokes) – no flipturns.
- Re-introduce some synchro-specific skills (no inversions)
  - Horizontal sculling
  - Ballet legs
  - Eggbeater and body boosts
  - Land-drill
- Athlete should not be in pattern
- Avoid resistance training and high-impact cardio
- Limit electronic use (<1 hour/day)
- Dampen light and sound exposure at the pool when possible (wear sunglasses and ear plugs)
- Continue flexibility and extension exercises.

### **Stage 4 Non-contact Synchro Training Drills**

- Increase physical and cognitive load
- Resume full dryland training including resistance training
- Re-introduce inverted skills and whole-body movements
  - Technical drills, gradually increasing intensity
  - Figure parts
  - Routine sections
  - Flip turns
- Remain out of the pattern
- Re-introduce full light and sound stimulation at the pool
- Limited electronic use (<1 hour/day).

### **Stage 5 Full-contact Synchro Practice**

- Resume normal training activity – full practice participation



- Gradually re-introduce athlete into the pattern
  - Start with small sections at a time and build up to big parts
- Increase electronics use (avoid screens for at least 1 hour before bed).

### **Stage 6 Full Return to Synchro**

- Full practice and competition participation

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### **References:**

McCrory, P., Meeuwisse, W., Dvorak, J., Aubry, M., Bailes, J., ... Vos, P.E. (2017). Consensus statement on Concussion in Sport: The 5th International Conference on Concussion in Sport held in Berlin, October 2016. *British Journal of Sports Medicine*, 51, 838-847.

## APPENDIX A

### CONCUSSION RECOGNITION TOOL 5®

To help identify concussion in children, adolescents and adults



#### RECOGNISE & REMOVE

Head impacts can be associated with serious and potentially fatal brain injuries. The Concussion Recognition Tool 5 (CRT5) is to be used for the identification of suspected concussion. It is not designed to diagnose concussion.

#### STEP 1: RED FLAGS – CALL AN AMBULANCE

If there is concern after an injury including whether ANY of the following signs are observed or complaints are reported then the player should be safely and immediately removed from play/game/activity. If no licensed healthcare professional is available, call an ambulance for urgent medical assessment:

- Neck pain or tenderness
- Double vision
- Weakness or tingling/ burning in arms or legs
- Severe or increasing headache
- Seizure or convulsion
- Loss of consciousness
- Deteriorating conscious state
- Vomiting
- Increasingly restless, agitated or combative

- Remember:**
- In all cases, the basic principles of first aid (danger, response, airway, breathing, circulation) should be followed.
  - Assessment for a spinal cord injury is critical.
  - Do not attempt to move the player (other than required for airway support) unless trained to do so.
  - Do not remove a helmet or any other equipment unless trained to do so safely.

If there are no Red Flags, identification of possible concussion should proceed to the following steps:

#### STEP 2: OBSERVABLE SIGNS

Visual clues that suggest possible concussion include:

- Lying motionless on the playing surface
- Slow to get up after a direct or indirect hit to the head
- Disorientation or confusion, or an inability to respond appropriately to questions
- Blank or vacant look
- Balance, gait difficulties, motor incoordination, stumbling, slow laboured movements
- Facial injury after head trauma

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#### STEP 3: SYMPTOMS

- Headache
- "Pressure in head"
- Balance problems
- Nausea or vomiting
- Drowsiness
- Dizziness
- Blurred vision
- Sensitivity to light
- Sensitivity to noise
- Fatigue or low energy
- "Don't feel right"
- More emotional
- More irritable
- Sadness
- Nervous or anxious
- Neck Pain
- Difficulty concentrating
- Difficulty remembering
- Feeling slowed down
- Feeling like "in a fog"

#### STEP 4: MEMORY ASSESSMENT

(IN ATHLETES OLDER THAN 12 YEARS)

- Failure to answer any of these questions (modified appropriately for each sport) correctly may suggest a concussion:
- "What venue are we at today?"
  - "Which half is it now?"
  - "Who scored last in this game?"
  - "What team did you play last week/game?"
  - "Did your team win the last game?"

#### Athletes with suspected concussion should:

- Not be left alone initially (at least for the first 1-2 hours).
- Not drink alcohol.
- Not use recreational/ prescription drugs.
- Not be sent home by themselves. They need to be with a responsible adult.
- Not drive a motor vehicle until cleared to do so by a healthcare professional.

The CRT5 may be freely copied in its current form for distribution to individuals, teams, groups and organisations. Any revision and any reproduction in a digital form requires approval by the Concussion in Sport Group. It should not be altered in any way, rebranded or sold for commercial gain.

**ANY ATHLETE WITH A SUSPECTED CONCUSSION SHOULD BE IMMEDIATELY REMOVED FROM PRACTICE OR PLAY AND SHOULD NOT RETURN TO ACTIVITY UNTIL ASSESSED MEDICALLY, EVEN IF THE SYMPTOMS RESOLVE**

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## APPENDIX B

### SSO Return-to-synchro Concussion Progress Tracker

Athlete Name: \_\_\_\_\_ Date of Injury: \_\_\_\_\_

#### Stage One: Limited Physical and Cognitive Activity

Date Started: \_\_\_\_\_ Date Completed: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date of Medical Clearance to Exercise: \*

#### Stage Two: Light Aerobic Exercise ( $\leq 70\%$ Max HR)

Date Started: \_\_\_\_\_ Date Completed: \_\_\_\_\_

#### Activity Checklist:

##### Stationary Cycling

- 15 min
- 20 min
- 25 min
- 30+ min

##### Walking

- 15 min
- 20 min
- 25 min
- 30+ min

\* Medical clearance to exercise must be provided by a medical professional. This includes a family physician, pediatrician, emergency room physician, sports-medicine physician, neurologist or nurse practitioner. Documentation from any other source will not be acceptable.



**Kick**

- 200m
- 400m
- 500m

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Stage Three: Synchro-specific Exercise**

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

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

**Activity Checklist:**

- Jogging
- Swimming (no turns)
  - Freestyle
  - Backstroke
  - Breaststroke
  - Butterfly
- Horizontal sculling
- Ballet legs
- Eggbeater
- Body boosts
- Land drill (no heads)

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Stage Four: Non-contact Synchro Training Drills**

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

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





**Activity Checklist:**

- Flip turns
- Inverted Technical Drills
- Figure parts
- Routine parts (out of pattern)

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Stage Five: Full-contact Synchro Practice**

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

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

**Activity Checklist:**

- Whole figures
- Routine Swim-Throughs
- Pattern Swimming
  - Half laps
  - Full laps
  - Halves
  - Full swim through

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Stage 6: Full Return to Synchro**

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