



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

* 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 flip turns.
- 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

Prepared by:

Laura McClemon Steacy, MSc & Lynda Mainwaring, PhD C.Psych.

University of Toronto Concussion Lab

416-978-5307

www.concussion.utoronto.ca

References:

McCrary, 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.