

Water Polo Return-to-Sport Strategy
Developed by Water Polo Canada

Stage	Aim	Activity	Goal of each step
1	Symptom-limiting activity	Daily activities that do not provoke symptoms.	Gradual re-introduction of work/school activities
2	Light aerobic activity	<p><u>Warm up:</u> Stationary bike or inclined treadmill for 5 min @ 50% HR max</p> <p><u>Exercises:</u> Stationary bike for 20 min @ 70% HR max in interval sets Floor stretching routine: gluteals, latissimus, quadriceps, hamstrings, adductors, butterfly stretch, happy baby pose, pigeon stretch... Foam roller on key areas: hips, back and shoulders Mobility work for hip flexion, rotations, extension</p> <p>No resistance training</p>	Increase heart rate
3	Sport-specific exercise	<p><u>Warm up:</u> Dryland with the team 200m freestyle without turns at the end of the pool 3 minutes eggbeater 5 min passes while facing partner</p> <p><u>Cardiovascular:</u> Interval swim sets 3 x 5 x 25m progressive intensity up to 70% alt 25m 50% (750m total) 20 sec rest between sets</p> <p><u>Technical work:</u> 5 min passes with 2 partners 3 x 50m eggbeater with blocking motions 3 x 50m eggbeater with alternate side sliding 10 x shooting at the net without opponents and no goalie</p> <p><u>Cool down:</u> 100m free @ 50% intensity, foam roller and stretching</p> <p>No head impact activities.</p>	Add movement

4	Non-contact training drills	<p><u>Warm up:</u> Dryland with the team (include skipping rope x 3 min) 4 x diving into the pool with 50m freestyle 50m eggbeater 50m breaststroke 25m water polo backstroke + 25m eggbeater and vertical jumps 5 times 10 sec breath hold with head underwater (alt 10 sec rest)</p> <p><u>Cardiovascular:</u> 5 x catch up 25m head up: 60-70-80-90-100% (30 sec active rest throwing ball between reps) 5 x 25m sprints head up (30 sec active rest throwing ball between reps) 2 x 25m breaststroke 5 x 1/2 pool sprints, spin and receive long pass + simulate post shot (return water polo backstroke easy)</p> <p><u>Technical work:</u> 3 min passing with 3 other players 5 x 10 sec mirror drills with an opponent (alt 20 sec passive rest/set) 10 x 5m sprint with the ball, fake and throw on net with goalie and 1 defender 10 x 2vs1 + goalie, receive pass and throw on net 3 x 10 blocking shots moderate intensity</p> <p><u>Cool down:</u> 200m easy + foam roller and stretching</p> <p><u>Strength training:</u> Keep resistance below 80% 1RM and avoid jumping, Olympic lifting or exercises where head is below the level of the hips (i.e. back extensions on a bench) Progressively increase external resistance for multi-joint exercises</p> <p>May start progressive resistance training.</p>	Exercise, coordination and increased thinking
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5	Full contact practice	<p>Following medical clearance.</p> <p><u>Warm up:</u> Dryland with the team 100m free with turns at the ends of the pool 5 x (10m eggbeater + 6 turbo + free to finish pool) Alternate 5 x (10m eggbeater + 4 consecutive jumps + free to finish pool) 5 min passing with 1 partner Cardiovascular: Catch up 25m head up: 60-70-80-90-100% (30 sec rest) 5 x all-out sprints with head up 2 x 25m breastroke 5 x 1/2 pool sprints, receive pass and finish 1/2 pool easy with the ball Rest 1 min 5 x 1/2 pool sprint, spin and receive long pass + simulate post shot (return water polo backstroke easy) Active rest, passing with leaning as when avoiding a block</p> <p><u>Technical work:</u> 2 x 5 reps 1vs1 battle to steal ball 5m away Passive rest 2 min 2 x 5 reps defensive block Passive rest 2 min 3vs3 simulations in small surface Progress to 6vs6 full size playing area</p> <p><u>Cool down:</u> 200m easy free, foam rolling and stretching</p> <p><u>Strength training:</u> Return to normal resistance loads, Olympic lifting and Valsalva technique</p>	Restore confidence and assess functional skills by coaching staff
6	Return to Sport	Normal game play.	

Adapted from: McCrory et al. (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(11), 838-847.

Water Polo Goalie-Specific Return-to-Sport Strategy

Stage	Aim	Activity	Goal of each step
1	Symptom-limiting activity	Daily activities that do not provoke symptoms.	Gradual re-introduction of work/school activities
2	Light aerobic activity	<p><u>Warm up:</u> Stationary bike or inclined treadmill for 5 min @ 50% HR max</p> <p><u>Exercises:</u> Stationary bike for 20 min @ 70% HR max in interval sets Tennis ball throws against neutral colour wall: 5 right hand throws with right hand catch 5 left hand throws with left hand catch 10 throws with alternate throwing and catching hands Floor stretching routine: gluteals, latissimus, quadriceps, hamstrings, adductors, butterfly stretch, happy baby pose, pigeon stretch... Foam roller on key areas: hips, back and shoulders Mobility work for hip flexion, rotations, extension</p> <p>No resistance training</p>	Increase heart rate
3	Sport-specific exercise	<p><u>Warm up:</u> Dryland with the team 200m freestyle without turns at the end of the pool 3 minutes eggbeater 5 min passes while facing partner</p> <p><u>Cardiovascular:</u> Interval swim sets 3 x 5 x 25m progressive intensity up to 70% alt 25m 50% (750m total) 20 sec rest between sets</p> <p><u>Technical work:</u> <i>In the pool</i> Circuit training: 3x (5sec eggbeater hands up, 6x lateral lunging alt sides, 10sec crazy hands, 10sec flutter kick against the wall) 5 min passing with 1 partner at increasing distance 10-10sec of reaction drills with side to side or vertical jumping 10x blocking lobed throws in free space (no net)</p> <p><i>Out of the water, tennis ball throws against a wall:</i> 5 right hand throws with right hand catch 5 left hand throws with left hand catch 10 throws with alternate throwing and catching hands</p>	Add movement

		<p><i>Athlete can also be challenged on land with passing and reaction drills with partner</i></p> <p><u>Cool down:</u> 100m free @ 50% intensity, foam roller and stretching</p> <p>No head impact activities.</p>	
4	Non-contact training drills	<p><u>Warm up:</u> Dryland with the team (include skipping rope x 3 min) 4 x diving into the pool with 50m freestyle 50m eggbeater 50m breaststroke 25m water polo backstroke + 25m eggbeater and vertical jumps 5 times 10 sec breath hold with head underwater (alt 10 sec rest)</p> <p><u>Cardiovascular:</u> Lunge and jump to the same side 4 x 6 Lunge and jump to opposite side 4 x 6 Jump and lunge to the same side 4 x 6 Jump and lunge to the opposite side 4 x 6 Goalie position T-test 3 x 5 x 5 with 30 sec rest between reps and 3 min between sets</p> <p><u>Technical work:</u> 5 minutes passing with 1 partner at increasing distances 10 x blocking lobed shots vs single attacker 10 x top corner blocking (2 on 1 play or single attacker vs goalie) 10 x blocking direct shots from various play positions, left to right then right to left (2 on 1 play or single attacker vs goalie) Reaction drills following ball movement 5 x 10 reps left/right/up</p> <p><i>This is also an opportune period to practice decision making with match video situations and others, volume dependant on visual and cognitive findings at Step 1</i></p> <p><u>Cool down:</u> 200m easy + foam roller and stretching</p> <p><u>Strength training:</u> Keep resistance below 80% 1RM and avoid jumping, Olympic lifting or exercises where head is below the level of the hips (i.e. back extensions on a bench) Progressively increase external resistance for multi-joint exercises</p> <p>May start progressive resistance training.</p>	Exercise, coordination and increased thinking

5	Full contact practice	<p>Following medical clearance.</p> <p><u>Warm up:</u> <i>Continue to monitor heart rate throughout this period. Ensure return to adequate heart rate between longer sets or after very intense drills.</i></p> <p>Dryland with the team 100m free with turns at the ends of the pool 3 x 1/2 distance eggbeater sideways and switch to the end of the lap 3 x 1/2 distance eggbeater and slide every 5 seconds, finish freestyle 3 x 1/2 distance eggbeater and jump every 5 seconds, finish freestyle 5 min passing with partner face to face</p> <p><u>Cardiovascular:</u> Lunge and jump to the same side 4 x 6 Lunge and jump to opposite side 4 x 6 Jump and lunge to the same side 4 x 6 Jump and lunge to the opposite side 4 x 6 Circuit training: 3x (5sec eggbeater hands up, 6x lateral lunging alt sides, 10sec crazy hands, 10sec flutter kick against the wall)</p> <p><u>Technical work:</u> 5 minutes passing with 1 partner at increasing distances Practice game situations with 1/2 field or play (i.e. positions 1-2-3-6 only) 2 x 10 blocking lobed shots random sides 2 x 10 blocking straight top corner shots random sides 2 x 10 blocking skipped shots random sides 15 x blocking 2 on 1 situation, full net to cover</p> <p><u>Cool down:</u> 200m easy free, foam rolling and stretching</p> <p><u>Strength training:</u> Return to normal resistance loads, Olympic lifting and Valsalva technique</p>	Restore confidence and assess functional skills by coaching staff
6	Return to Sport	Normal game play.	

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