

# RETURN-TO-SPORT STRATEGY

This water polo specific Return-to-Sport Strategy was developed as part of Water Polo Canada's (WPC) Concussion Protocol by the Institut National du sport du Québec (INS Québec) in collaboration with WPC. It ensures that correct activities are completed at the appropriate stages of an athlete's return-to-sport journey and is an important tool for stakeholders.

## Return-to-Sport Summary:

### 1 Rest (24 - 48 hours)

An initial period of 24-48 hours of rest is recommended before starting the water polo specific Return-to-Sport strategy.

**⚠ IF THE PLAYER EXPERIENCES NEW OR WORSENING SYMPTOMS AT ANY STAGE, THEY SHOULD GO BACK TO THE PREVIOUS STAGE.**

### 2 Follow the Return-to-School/Work & Return-to-Sport Strategies

These strategies are designed to work in conjunction with each other. Therefore, please review both strategies to understand the correct stage sequencing for a safe, stepwise return to school, work and sports after a concussion.

### 3 Return to Full Contact Sport Activities

Once the player has concluded the stages of the Return-to-School/Work strategy and is completing the stages of the Return-to-Sport strategy, a medical doctor or nurse practitioner can assess whether they can return to full contact practice and gameplay activities. If the player is ready to return, a Medical Clearance Letter will be issued. Players cannot return to full contact sport activities until medically cleared by a doctor or nurse practitioner.

The final decision to medically clear an athlete to return to full-contact game or practice activity must be based on the clinical judgment of the medical doctor or nurse practitioner taking into account the athlete's past medical history, clinical history, physical examination findings, and the results of other tests and clinical consultations where indicated (i.e. neuropsychological testing, diagnostic imaging).

Prior to returning to full contact practice and game play, each player that has been diagnosed with a concussion must provide their coach with a standardized Medical Clearance Letter that specifies that a medical doctor or nurse practitioner has personally evaluated the patient and has cleared the player to return to sports. In geographic regions of Canada with limited access to medical doctors (i.e. rural or northern communities), a licensed healthcare professional (such as a nurse) with pre-arranged access to a medical doctor or nurse practitioner can provide this documentation. A copy of the Medical Clearance Letter should also be submitted to sport organization officials that have injury reporting and surveillance programs where applicable.

Players who have been provided with a Medical Clearance Letter may return to full sport activities as tolerated. If the athlete experiences any new concussion-like symptoms while returning to play, they should be instructed to stop playing immediately, notify their parents/caregivers, coaches, trainers or teachers, and undergo follow-up Medical Assessment.

# RETURN-TO-SPORT STRATEGY - FIELD PLAYER

## STAGE 1

### SYMPTOM-LIMITING ACTIVITIES

**ACTIVITIES:** Daily activities that do not provoke symptoms

**GOAL OF THE STAGE:** Gradual reintroduction of work/school activities

## STAGE 2

### LIGHT AEROBIC ACTIVITY\*

#### ACTIVITIES

##### Warm -up:

- Stationary bike or inclined treadmill for 5 min @ 50% HR max.

##### Exercises:

- Stationary bike for 20 min @ 70% HR max in interval sets.
- Floor stretching routine: 1) gluteals; 2) latissimus; 3) quadriceps; 4) hamstrings; 5) adductors; 6) butterfly stretch; 7) happy baby pose; 8) pigeon stretch, etc.
- Foam roller on key areas: hips, back and shoulders
- Mobility work for hip flexion, rotations and extension

#### NO RESISTANCE TRAINING

**GOAL OF THE STAGE:** Increase heart rate

\* Typically, these activities are performed at a residence and not during club practices. If a stationary bike or treadmill is not available, a brisk walk in a quiet outdoor environment while wearing sunglasses is recommended.

## STAGE 3

### SPORT-SPECIFIC EXERCISE

#### ACTIVITIES

##### Warm -up:

- Dryland with the team
- 200m freestyle without flip turns at the end of the pool
- 3 min eggbeater
- 5 min passes while facing partner

##### Cardiovascular:

- Interval swim sets 3 x 5 x 25m progressive intensity up to 70% alt 25m @ 50% (750m total) with 20 sec rest between sets

##### Technical Work:

- 5 min passing 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

##### Cool Down:

- 100m freestyle @ 50% intensity, foam roller and stretching

#### NO HEAD IMPACT ACTIVITIES

**GOAL OF THE STAGE:** Add movement

## STAGE 4

## NON-CONTACT TRAINING DRILLS

### ACTIVITIES

#### Warm -up:

- Dryland with the team (include skipping rope for 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 x 10 sec breath hold with head underwater (alt 10 sec rest)

#### Cardiovascular:

- 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)

#### Technical Work:

- 3 min passing with 3 other players
- 5 x 10 sec mirror drills with an opponent (alternate 20 sec passive rest/set)
- 10 x 5m sprint with the ball, fake and throw on net with goalie and 1 defender
- 10 x 2 vs. 1 + goalie, receive pass and throw on net
- 3 x 10 blocking shots moderate intensity

#### Cool Down:

- 200m easy + foam roller and stretching

#### Strength Training:

- 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.

### **MAY START PROGRESSIVE RESISTANCE TRAINING**

**GOAL OF THE STAGE:** Exercise, coordination and increased thinking

## STAGE 5

### FULL CONTACT PRACTICE FOLLOWING MEDICAL CLEARANCE

#### ACTIVITIES

##### Warm -up:

- Dryland with the team.
- 100m freestyle with turns at the ends of the pool
- 5 x 25m (10m eggbeater + 6 turbo + freestyle to finish pool)
- Alternate 5 x 25m (10m eggbeater + 4 consecutive jumps + freestyle 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 25m all-out sprints with head up
- 2 x 25m breaststroke
- 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

##### Technical Work:

- 2 x 5 reps 1 vs. 1 battle to steal ball 5m away
- Passive rest 2 min
- 2 x 5 reps defensive block
- Passive rest 2 min
- 3 vs. 3 simulations in small surface
- Progress to 6 vs. 6 full size playing area

##### Cool Down:

- 200m easy free, foam rolling and stretching

##### Strength Training:

- Return to normal resistance loads, Olympic lifting and Valsalva technique.



**THIS STAGE SHOULD NOT BE STARTED UNLESS  
THE PLAYER HAS COMPLETED ALL OF THE STAGES  
OF THE RETURN-TO-SCHOOL/WORK STRATEGY!**

**GOAL OF THE STAGE:** Restore confidence and assess functional skills by coaching staff

## STAGE 6

### RETURN-TO-SPORT

**ACTIVITIES:** Normal game play

# RETURN-TO-SPORT STRATEGY - GOALIE

## STAGE 1

### SYMPTOM-LIMITING ACTIVITIES

**ACTIVITIES:** Daily activities that do not provoke symptoms

**GOAL OF THE STAGE:** Gradual reintroduction of work/school activities

## STAGE 2

### LIGHT AEROBIC ACTIVITY\*

#### ACTIVITIES

##### Warm -up:

- Stationary bike or inclined treadmill for 5 minutes @ 50% HR max.

##### Exercises:

- Stationary bike for 20 minutes @ 70 HR max in interval sets.
- Tennis ball throws against neutral coloured 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: 1) gluteals; 2) latissimus; 3) quadriceps; 4) hamstrings; 5) adductors; 6) butterfly stretch; 7) happy baby pose; 8) pigeon stretch, etc.
- Foam roller on key areas: hips, back and shoulders
- Mobility work for hip flexion, rotations, extension

#### NO RESISTANCE TRAINING

**GOAL OF THE STAGE:** Increase heart rate

*\*Typically, these activities are performed at a residence and not during club practices. If a stationary bike or treadmill is not available, a brisk walk in a quiet outdoor environment while wearing sunglasses is recommended.*

## STAGE 3

### SPORT-SPECIFIC EXERCISE

#### ACTIVITIES

##### Warm -up:

- Dryland with the team
- 200m freestyle without flip turns at the end of the pool
- 3 minutes eggbeater
- 5 minutes passes while facing partner

##### Cardiovascular:

- Interval swim sets 3 x 5 x 25m progressive intensity up to 70% alt 25m 50% (750m total) with 20 sec rest between sets

##### Technical Work (In the pool):

- Circuit training: 3 x (5 sec eggbeater hands up, 6 x lateral lunging alt sides, 10 sec crazy hands, 10 sec flutter kick against the wall)

- 5 min passing with 1 partner at increasing distance.
- 10-20 sec of reaction drills with side to side of vertical jumping
- 10 x blocking lobbed throws in free space (no net)

Technical Work (Out of the water, tennis ball throws against a 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



*The player can also be challenged on land with partner passing and reaction drills.*

Cool Down:

- 100m freestyle @ 50% intensity, foam roller and stretching

**NO HEAD IMPACT ACTIVITIES**

**GOAL OF THE STAGE:** Add movement

**STAGE 4**

**NON-CONTACT TRAINING DRILLS**

**ACTIVITIES**

Warm -up:

- Dryland with the team (include skipping rope for 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 x 10 sec hold with head underwater (alt 10 sec rest)

Cardiovascular:

- Lunge and jump to the same side 4 x 6
- Lunge and jump to the 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.

Technical Work:

- 5 min passing with 1 partner at increasing distances
- 10 x blocking lobbed 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



*This is also an opportune period to practice decision making with match video situations and others, volume dependent on visual and cognitive findings at Step 1.*

Cool Down:

- 200m easy + foam roller and stretching

### Strength Training:

- 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.

### **MAY START PROGRESSIVE RESISTANCE TRAINING.**

**GOAL OF THE STAGE:** Exercise, coordination and increased thinking

## **STAGE 5**

### **FULL CONTACT PRACTICE FOLLOWING MEDICAL CLEARANCE**

#### **ACTIVITIES**

##### Warm -up:

- Dryland with the team.
- 100m freestyle with regular turns at each end of the pool.
- 3x1/2 distance eggbeater sideways, switch at the end of the lap
- 3x1/2 distance eggbeater and slide every 5 sec., finish freestyle
- 3x1/2 distance eggbeater and jump every 5 sec., finish freestyle
- 5 min passing with partner face to face



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THE PLAYER HAS COMPLETED ALL OF THE STAGES  
OF THE RETURN-TO-SCHOOL/WORK STRATEGY!**

##### Cardiovascular:

- Lunge and jump to the same side 4x6
- Lunge and jump to the opposite side 4x6
- Jump and lunge to the same side 4x6
- Jump and lunge to the opposite side 4x6
- Circuit training: 3x (5 sec eggbeater hands up, 6x lateral lunging alt sides, 10 sec crazy hands, 10 sec flutter kick against the wall).



Continue to monitor heart rate throughout this period. Ensure return to adequate heart rate between longer sets or after very intense drills.

##### Technical Work:

- 5 min passing with 1 partner at increasing distances
- Practice game situations with 1/2 field of play (i.e., positions 1-2-3-6 only).
- 2x10 blocking lobbed shots random sides
- 2x10 blocking straight top corner shots random sides
- 2x10 blocking skip shots random sides
- 15x blocking 2 on 1 situation, full net to cover.

##### Cool Down:

- 200m easy free, foam rolling and stretching

##### Strength Training:

- Return to normal resistance loads, Olympic lifting and Valsalva technique.

**GOAL OF THE STAGE:** Restore confidence and assess functional skills by coaching staff

## **STAGE 6**

### **RETURN-TO-SPORT**

**ACTIVITIES:** Normal game play