



SHOULDER STABILITY PROTOCOL

A comprehensive, interdisciplinary, data driven approach to complete rehabilitation.

1	EARLY POST SURGICAL CARE
2	INITIAL MOTION
3	MOBILITY & STRENGTH I
4	MOBILITY & STRENGTH II
5	MOBILITY & STRENGTH II
6	OVERHEAD STRENGTH & INTRO POWER
7	OVERHEAD POWER & SKILL TRAINING
8	REINTEGRATION TO SPORT PERFORMANCE TRAINING
9	PERFORMANCE TRAINING & CONTACT SPORTS*



We want to extend our sincere welcome to you at the Sport Science Rehab and Performance Centre in Ottawa. We regret to hear that you have sustained a shoulder injury. We understand that you will have many questions along the way. We assure you that you are in capable and experienced hands, and our dedicated team is fully equipped to guide you through this process. Please feel encouraged to ask questions at any stage along the way. We would be happy to help.

Our team at the centre comprises leading experts in sports science, physiotherapy, and rehabilitation. We approach your situation with the highest levels of personal attention and research / data driven approach. The likes of which have never been offered in this province. Rest assured that your treatment plan and care are our highest priority and will be tailored to your specific needs and progress will be monitored closely. We are well aware of the challenges that come with this type of injury and the subsequent recovery. Our commitment to utilizing an integrated care approach, ensures that you will receive the most effective and up-to-date care available. Our protocols are designed to promote optimal healing, complete recovery and full return to your personal goals.

We understand that the rehabilitation process can be demanding both physically and mentally. However, our team is here to provide you with the guidance and support you require. We believe in a holistic approach to recovery, focusing not only on the physical aspects but also on your overall well-being.

Should you have any questions or concerns regarding your treatment plan, progress, or any other matters, please do not hesitate to communicate with us. We are here to address your needs and provide you with the necessary information. Your practitioner is always your first point of contact. As needed please feel free to contact our clinic owners directly. They will happily take time to resolve and concerns or to provide some insight on the rehab process.

Your commitment to your recovery is crucial, and we are here to facilitate your journey back to your pre-injury state. We look forward to working closely with you and helping you regain your strength, mobility, and confidence.

Welcome once again to the Sport Science Rehab and Performance Centre. We are honored to be a part of your recovery process and are confident that together, we can achieve positive outcomes.

Sincerely,

The HW and Sport Science Team

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THE SPORT SCIENCE TEAM

We are a collaborative team of Rehab Specialists including Physios, Massage, Chiropractic, Strength and Conditioning, Biomechanists, Exercise Physiologists, Dietetics and Sport Medicine. We all work together with the collective goal to deliver the best all encompassing rehab experience possible.



THE SPORT SCIENCE OBJECTIVE

To leverage advanced resources to enhance rehab outcomes so that our patients can reach their activity or sport related goals.



THE SPORT SCIENCE METHODOLOGY

- A. Establish an integrated, evidence based process that is base on the most recent body of research.
- B. Utilize the entirety of our staff's expertise and knowledge wh best indicated along the rehab spectrum.
- C. Centre the individualized rehab framework around client centered goals.





SHOULDER STABILITY REHAB PROTOCOL

SURGICAL & NON-SURGICAL REHAB

The following anterior shoulder stabilisation protocol is a comprehensive 6-9 month program that encompasses immediate care up to a clients individual activity or sport goals. Timelines will vary based a client's individual performance goals, as well as the complexity of the surgery and post-surgical directives. For example, based on the details of the repair, & initial range of motion restrictions a surgeons directive as to when a client is cleared to begin strengthening can vary between 3 to 12 weeks post op.

The unique framework of the following protocol is as such;

- a. Progressively restore range of motion,
- b. Reinforce new ranges of motion with shoulder stability exercise
- c. Once stability is attained, progress to higher demand strength within that range
- d. Following strength, re-introduce reaction and power movements
- e. Integrate activity / sport specific needs such as overhead throwing etc.
- f. Reintegration to sport training and competition.

As such, while we are working on outer range stability tasks, we will also be working on inner range, safe, heavy strength tasks.

RANGE OF MOTION & STABILITY

STRENGTH

POWER AND RATE OF FORCE

PERFORMANCE TRAINING



PHASE 1: EARLY POST SURGICAL CARE

OBJECTIVE:

1. Control Pain
2. Reduce Inflammation and Swelling
3. Maintain Mobility of Elbow, Hand and Wrist

SLING:

In this primarily healing centered phase, the shoulder sling / immobilizer should be worn AT ALL TIMES and removed only for physio exercises. You may also remove the sling carefully for personal hygiene and changing clothes. AVOID ANY ACTIVE (UNASSISTED) MOTION OF THE SHOULDER.

COLD THERAPY:

A Cold Therapy Unit (Gameready) or an ice pack should be applied immediately after surgery and used for at least 20 minutes every other hour while you are awake. In order to avoid skin irritation, place a towel between the unit and your skin, and do not leave it running continuously.

MEDICATION:

Follow instructions provided by your physician.

SLEEPING RECOMMENDATIONS:

Apart from doing your exercises, your operative shoulder should be in the sling AT ALL TIMES including at night or as instructed by your surgeon. Initially you may sleep on your non-operative shoulder, on your back, or in a semi-upright position with pillows under your back. Place a pillow between your forearm and your body to help support your operative shoulder.

WOUND CARE:

For arthroscopic procedures, remove dressing 2 days after surgery. For open procedures, remove dressing 4 days after surgery. Please do not shower until 2 days after surgery to reduce the risk of infection. Remove the skin tapes (steri-strips) 2 weeks after surgery or when they start falling off on their own. You may gently wash the wound area with soap and water. Be sure to keep your armpit clean!

NUTRITION & TISSUE HEALING PROTOCOLS

Please refer to physio and performance nutritionist for guidance and our Sport Science Tissue Healing Nutritional directives.

Online Resources: www.sportsciencecanada.com/nutrition



PHASE 2: INITIAL MOTION

*The initiation of this phase depends on post-op surgical directives, where in some instances may not begin until 6-10 weeks post-op. If this is a non-surgical rehab, often this phase may begin 3 weeks following immobilisation in a sling.

OBJECTIVE:

1. Mobility: Passive / assisted range of motion within surgical parameters
2. Stability: Good shoulder blade (scapulothoracic) control
3. Stability: Submax rotator cuff engagement, if permitted

EXIT CRITERIA

1. Attain passive shoulder flexion to 120 degrees and external rotation to 20 degrees*
2. Maintain good posture and scapular control during exercises
3. Pain free during initial isometric engagement

*Dependent on surgical restrictions

PHASE 3: MOBILITY & STRENGTH I

OBJECTIVE:

1. Mobility: Gradually restore active shoulder range of motion (120 degrees of flexion). Progress towards 160 degrees of flexion*
2. Stability: Promote dynamic shoulder stability (120 degrees)*
3. Strength: Begin muscle strengthening & endurance training (90 degrees)*

*Dependent on surgical restrictions

EXIT CRITERIA

1. Good quality active movement of shoulder within parameters, without compensation.
2. Good shoulder blade control
3. Pain free during active shoulder movements & resisted exercises.



PHASE 4: MOBILITY & STRENGTH II

OBJECTIVE:

1. Stability: Progress active shoulder stability in new ranges (160-180 degrees)
2. Strength: Progress heavy strength in new overhead ranges (135 degrees).
3. Plyos/power: Initial plyometrics & catches (90 degrees)
4. Sport Skills: Initiation of basic sport specific skills (90 degrees)

EXIT CRITERIA

1. Rotator cuff strength Symmetry (<15% asymmetry)
2. Baseline testing for other shoulder tests specific to client goals.

PHASE 5: MOBILITY & STRENGTH III

OBJECTIVE:

1. Stability: Establish full mobility and progress stability in outer ranges.
2. Strength: Maximize shoulder strength & endurance (180 degrees)
3. Plyos/ Power: Plyometrics in overhead positions (135 degrees)
4. Sport Skills: Begin sport specific reactionary tasks (90 degrees)

EXIT CRITERIA

1. Rotator cuff strength Symmetry (<15% asymmetry)
2. Pressing strength testing (<15% asymmetry)
3. Baseline testing for other overhead strength tests specific to clients goals
4. Strength Endurance testing

PHASE 6: OVERHEAD STRENGTH & INTRO TO POWER

OBJECTIVE:

1. Stability: Progress full shoulder mobility & stability in full ranges.
2. Strength: Maximize strength in all directions (Full ranges)
3. Plyos/Power: Progress power & plyometrics in overhead positions. (180 degrees)
4. Progress Sport skills & reaction work (135 degrees)

EXIT CRITERIA

1. Overhead Strength & testing (<15% asymmetry)
2. Strength Endurance testing (<15% asymmetry)
3. Power testing



PHASE 7: OVERHEAD POWER & SKILL TRAINING

OBJECTIVE:

1. Strength: Maximize strength in outer ranges (Full ranges)
2. Strength/Plyos: Intro to contact/ falls in gym
3. Plyos/Power: Progress activity goals/ sport specific performance needs (Full Ranges)
4. Sport Skills: Full range reactionary and chaos drills in a controlled setting
5. Sport Skills: Begin non-contact, controlled drills in practice (Non-reactionary)

EXIT CRITERIA

1. Overhead power and rate of force development <15% asymmetry
2. Power testing metrics meet performance standards

PHASE 8: REINTEGRATION TO SPORT PERFORMANCE TRAINING

OBJECTIVE:

1. Plyos/Power: Advanced overhead plyos & Performance training
2. Sport Skills: Reintegration to sport specific training
3. Sport Skills: Build up sport specific endurance needs to withstand competition season
4. Sport Skills: Begin non-contact full practices with chaos decision

EXIT CRITERIA

1. Overhead power and rate of force development <15% asymmetry
2. Power testing metrics meet performance standards

PHASE 9: PERFORMANCE TRAINING & CONTACT SPORTS*

OBJECTIVE:

1. Plyos/Power: Attain any final sport specific performance needs
2. Readiness: Client is psychologically confident to return to their activity goals/sport
3. Sport Skills: Final prep for sport specific chaos & decision making situations
4. Sport Skill: Final sport training for robustness and contact needs for competition.

EXIT CRITERIA

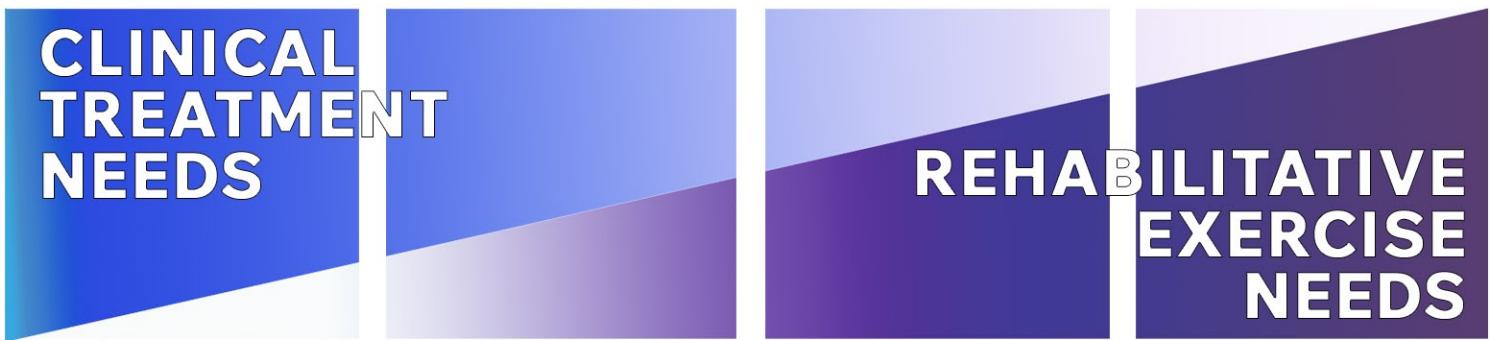
1. Attained all strength, power and reactionary standards
2. Attained all individual sport specific performance needs.
3. Is psychologically ready to return to competition

Phase is typically reserved in the event that additional rehab is required for high-collision sport athletes



THE SHOULDER REHAB TIMELINE

The illustration below represents the phased progressions. You will see at the beginning rehab will be heavily treatment focused. We will then move towards a focus on exercise progressions, including stability, strength, overhead power and contact training. All these aspects progress from inner ranges to outer and overhead ranges. Thirdly you will see a final transition towards sport/client centered goals activities & sport specific skills. These skills will then progress from controlled practice, to chaos/decision making tasks and then return to full training & competition. Testing will take place at the end of each block to ensure progress is being made as planned, that we can appropriately move to the next phase or if any adjustments are indicated along the way.



January							February							March						
Sun	Mon	Tue	Wed	Th	Fri	Sat	Sun	Mon	Tue	Wed	Th	Fri	Sat	Sun	Mon	Tue	Wed	Th	Fri	Sat
1	2	3	4	5	6	7	8	9	10	11	12	13	14	5	6	7	8	9	10	11
15	16	17	18	19	20	21	22	23	24	25	26	27	28	12	13	14	15	16	17	18
29	30	31												19	20	21	22	23	24	25
														26	27	28	29	30	31	

April							May							June						
Sun	Mon	Tue	Wed	Th	Fri	Sat	Sun	Mon	Tue	Wed	Th	Fri	Sat	Sun	Mon	Tue	Wed	Th	Fri	Sat
						1								4	5	6	7	8	9	10
2	3	4	5	6	7	8	9	10	11	12	13	14	15	7	8	9	10	11	12	13
16	17	18	19	20	21	22	23	24	25	26	27	28	29	21	22	23	24	25	26	27
30							28	29	30	31				11	12	13	14	15	16	17

July							August						
Sun	Mon	Tue	Wed	Th	Fri	Sat	Sun	Mon	Tue	Wed	Th	Fri	Sat
						1							
2	3	4	5	6	7	8							
9	10	11	12	13	14	15	6	7	8	9	10	11	12
16	17	18	19	20	21	22	13	14	15	16	17	18	19
23	24	25	26	27	28	29	20	21	22	23	24	25	26
30	31						27	28	29	30	31		

- Game ready + Stim Pickup
- 1:1 Rehab Exercise
- Surgery
- Testing / Retesting
- Begin Nutrition Protocol
- Sport Rehab + Practice Int.
- Treatment
- New Exercise Program
- Return to Sport + Chaos Training
- Discharge and Performance Training



SAMPLE SHOULDER REHAB TESTING REPORT

A comprehensive, interdisciplinary, data driven approach to complete rehabilitation.

Your Progress is Measured, Tracked and Reported Throughout

The criteria by which you progress from one phase of rehab to the next is based on a series of tests performed using research grade testing. These technologies reveal your capabilities to withstand the forces and movements required of the next phase of programming as well as your eventual return to activity and / or sport. Below is a sample report from the end of the "Plyo 1" phase. The green dots indicate that the patient has demonstrated sufficient performance in those areas. The yellow dots are test results which we will keep an eye on. The red indicated areas where we would want to see further improvement. These testing results are shared across your integrated team, and will directly shape your next phase of exercise programming.

SHOULDER REHAB PHASE 5: STRENGTH 2

SHOULDER STRENGTH

- Left Reach Scores (>0.67) (Green)
- Right Reach Scores (>0.67) (Yellow)
- Reach Score CM Asymmetry (<15%) (Green)
- Time to Balance Asymmetry (<10%) (Green)
- Left Time to Balance (<0.5s) (Green)
- Right Time to Balance (<0.5s) (Green)
- Left GFR (Peak Force) (Red)
- Right GFR (Peak Force) (Green)
- GFR (Peak Force) Asymmetry (<15%) (Yellow)

MAXIMUM STRENGTH

- Peak Force Asymmetry at 30deg (<10%) (Yellow)
- Peak Force Asymmetry at 60deg (<10%) (Green)
- Peak Force Asymmetry at 30deg (<10%) (Green)
- Peak Force Asymmetry at 60deg (<10%) (Yellow)
- 0.80-1.0 Left Quad/Ham Ratio 30deg (Green)
- 0.80-1.0 Right Quad/Ham Ratio 30deg (Green)
- 0.60-1.0 Left Quad/Ham Ratio 60deg (Green)
- 0.60-1.0 Right Quad/Ham Ratio 60deg (Green)
- Left Peak Force (>2xBW) (Yellow)
- Right Peak Force (>2xBW) (Red)
- Peak Force Asymmetry (<10%) (Red)

POWER

- Eccentric Unloading Impulse Asymmetry (<20%) (Green)
- Eccentric Braking Rate of Force Development Asymmetry (<15%) (Red)
- Eccentric Braking Impulse Asymmetry (<15%) (Green)
- Concentric Impulse Asymmetry (<20%) (Green)
- Takeoff Velocity (>2.5m/s) (Yellow)
- Landing Peak Force Asymmetry (<15%) (Red)
- First 1/2 of Impulse Asymmetry (<15%) (Green)
- Second 1/2 of Impulse Asymmetry (<20%) (Green)
- Concentric Rate of Force Development Asymmetry (<20%) (Green)
- Mean Impulse Asymmetry (Green)
- Mean Peak Force Asymmetry (Green)
- Mean Contact Time (Green)
- Mean Reactive Strength Index (Yellow)

FULL FORCE POTENTIAL

- Bilateral IMTP - RFD at 150ms - Asymmetry (<15%) (Green)
- Bilateral IMTP - Net Peak Force Asymmetry (<15%) (Green)
- Single Leg IMTP - RFD at 150ms - Asymmetry (<15%) (Yellow)
- Single Leg IMTP - Net Peak Force Asymmetry (<15%) (Green)

UNDERSTANDING
RED - YELLOW - GREEN

- Suggests incomplete rehabilitation of one or more elements that need to be addressed in further rehab programming. (Red)
- Approaching the ability to withstand increased training load. Progressing well towards typical return to sport / regular activity. (Yellow)
- Most likely ready to withstand increased training load. Progressing well towards typical return to sport / regular activity. (Green)
- Did not test during this phase. (Grey)

SPORT SCIENCE REHAB & PERFORMANCE
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SHOULDER REHAB EXERCISE PROGRESSION

At Sport Science, your rehab programs will always be a click away. Our strength and conditioning specialists and rehab practitioners will create a comprehensive exercise program that targets the most important elements of your rehab. Your program will feature your exercises, sets, reps tempos and demonstrative videos, each step of the way.

PHASE GOALS:

Hip/Femur Dissociation
Maintain full knee, hip and ankle mobility
Progress strength and endurance
Begin controlled hamstring endurance and activation
Progress controlled planes of movement
Introduce dynamic strength exercises
Single leg stability
Cardiovascular fitness
Training Goals: Intro to unsupported Squat, single leg squat progressions and hinge technique. Progress oblique strengthening
Strength: Concentric & Eccentric: Dynamic, Sagittal Plane | Stationary: Frontal planes | Rotational

INDIVIDUAL GOALS:

DAILY

Exercise	Daily	Sets	Reps	Tempo	Notes
A1 Icing	1-2/day	1	30 min		Swelling Control
A2 Normatec	1/day	1	20 mins		

Mobility As Needed

Exercise	Daily	Notes
B1 On stomach, leg hanging over edge extended	2/day	5 min
B2 Wall slides	2/day	5 min
B3 Biking	2/day	5 min
B4 Standing banded knee extensions	2/day	15/ 5 sec hold

WARM UP

Exercise	Daily	Prep	Reps	Tempo	Notes
B5 Half Kneeling Femur on Pelvis Dissociation	2	6-8/			Progress to loaded/banded
B6 Quadruped Femur on Pelvis Dissociation	2	6-8/			Progress to loaded/banded
B7 TK Trunk on Pelvis Dissociation	2	6-8/			

STRENGTH DAY 1

Exercise	Sets	Reps	Tempo	Notes
A1 Ninja Squat eccentric	2	5	3-1-1	
A2 Step up w/ eccentric	2	6-10/	3-1-1	
A3 Posterior pants	2	6-10 Breaths		
B1 Goblet squat	3-5	6-10		
B2 SL box squat	3-5	6-10/		
B3 Sumo Pallof Press	3-5	6-10/		
C1 Walking march	2-4	10-15/		
C2 Calf pulses	2-4	8-10		
C3 Banded hamstring tempo	2-4	8-10/		
C4 Glute Iso/Groin Iso	2-4	2-4/	10s hold	

SPORT SCIENCE REHAB TEAM

SPORT MEDICINE / ORTHOPAEDIC SURGERY

- Dr. Dave Simon

PHYSIOTHERAPY

- Chelsey Roesler
- Heather Wing
- Julia Meliambro
- Kirsten Lemmon
- Matt Kelly
- Meghan Blanchard
- Rachel Marcotte
- Emilie Emond
- Scott Richards
- Luca Martello
- Kiera Lepine
- Sara Quiring
- Jessica Butterfield
- Calre Murphy

CHIROPRACTIC CARE

- Dr. Ryley Hayter, DC

MASSAGE THERAPY

- Basil Philips
- Carissa Boucher
- Dylan Crake
- Kristin Johnston
- Roy Cohen (Ostheopathic Manual Therapist)

ADMINISTRATIVE STAFF

- Paige Mirau (Baxter Road Clinic Lead)
- Emily Goodridge (Manager)

DIRECTOR OF SPORT SCIENCE

- Ryan Morrison

STRENGTH & CONDITIONING

- Brent Linker
- Leo Iaboni
- Sonia Cazzola
- Zachary Yantha

EXERCISE PHYSIOLOGY

- Kristine Walker

BIOMECHANICS

- Joanna Geck
- Matt Kelly

REHAB & PERFORMANCE DIETICIAN

- Ashley Charlebois
- Christine Tardif

REPORTING & TESTING

- Jennie Wong
- Adam Abraham