

# POST-THROW & ARM CARE ROUTINE

Evidence-Based Guidelines for Throwing Athletes



## READY TO THROW

After every throwing session, glenohumeral internal rotation (IR) and total rotational motion decrease measurably. These ROM deficits are established risk factors for shoulder and elbow injury. A structured arm care routine performed consistently after throwing is one of the most effective injury prevention strategies available. The components below form the foundation of an evidence-based throwing arm care program, addressing the most important impairments with the strongest available research.

### POST-THROW ARM CARE ROUTINE & OVERVIEW

Component	Exercise(s)	Dose	Why It Matters
<b>Posterior Shoulder Stretch</b>	Sleeper OR cross-body stretch (both equally effective)	3 × 30 sec, within 2-3 hours of high-intensity throwing	36% reduction in shoulder/elbow injuries (Shitara 2017)
<b>Posture Restoration</b>	Wall angels	2x20 within 1-2 hours post throw and daily	Large effect on scapular function and positioning
<b>Rotator Cuff/ Scapular Strengthening</b>	Banded ER/IR, Sidelying ER, Sidelying Flexion, Sidelying Decels	2–3 rounds of 10 reps, 30-60 minutes post-throw (weight/resistance should be light to medium)	9.8% vs 22.6% injury rate vs. stretching alone (Shitara 2022)
<b>Hip IR Mobility</b>	Hip internal rotation stretch (seated or supine)	2 × 30 sec each side	Kinetic chain — maintains lower half flexibility to reduce stress on UE
<b>Thoracic Mobility</b>	Thoracic rotation or extension over foam roller or chair	5–10 reps or 1–2 min	Kinetic chain — optimizes spinal function and force transfer
<b>Active Cool-Down</b>	Light jog or stationary bike	5–10 min	Supports general physiological recovery
<b>Cryotherapy (optional)</b>	Cold pack to shoulder	20–30 min as needed within 2-3 hours post-throw	Analgesic only; does not accelerate tissue healing

**Note on icing:** Brief icing (20–30 min) is analgesic only — it does not accelerate tissue healing and may impair it if used for extended periods. Use cryotherapy for pain management if needed; do not treat it as a required recovery step.

**Key evidence:** Shitara 2017 (daily posterior shoulder stretching → 36% injury reduction) · Shitara 2022 RCT (adding prone ER → 9.8% vs 22.6% injury rate) · Escamilla et al. AJSM 2017 (two-out drill fully restores IR and TRM after pitching) · Sakata 2019 RCT (kinetic chain program → ~50% injury reduction). Overall evidence for packaged post-throw routines is largely expert consensus; individual components (stretching, ER strengthening) carry the strongest data.



# POSTERIOR SHOULDER STRETCH

## Modified Sleeper Stretch

- Lie on the throwing-arm side
- Shoulder at 90° flexion, elbow at 90° flexion
- Let the scapula stabilize naturally against the table
- Opposite hand gently presses wrist/forearm toward IR end range
- Hold at tissue resistance — do not force overpressure

3 × 30 sec holds · daily



## Modified Cross-Body Stretch

- Lie on throwing-arm side
- Opposite hand stabilizes the scapula against the table
- Bring throwing arm across the body into horizontal adduction
- Control rotation — do not let the shoulder roll forward
- Rest at end range without overpressure

3 × 30 sec holds · daily

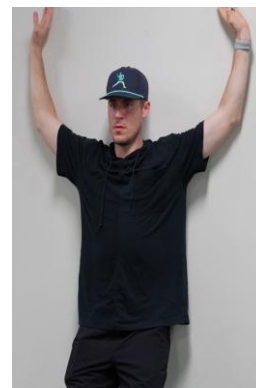
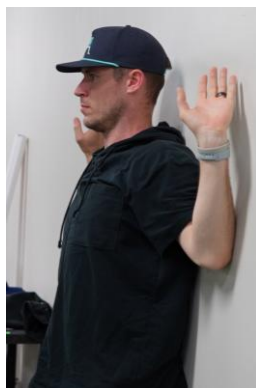


# POSTURE RESTORATION

## Wall Angels

- Stand with back flat against a wall, feet 2–3 inches from the base
- Press low back, upper back, and head into the wall
- Start with arms at 90° abduction, elbows bent 90° (goalpost position) — back of arms against the wall
- Slowly slide arms overhead while keeping entire arm contact with the wall
- Return to start — do not let the low back arch or arms lose contact

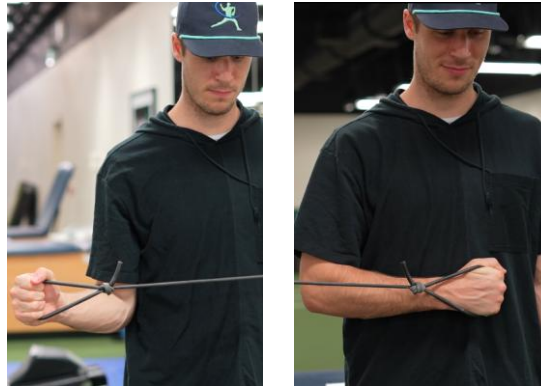
2 × 20 daily



# ROTATOR CUFF/SCAP STRENGTHENING

## Banded ER/IR

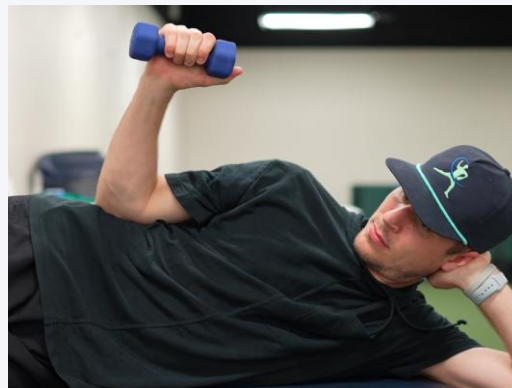
- Secure band at elbow height; stand sideways to the anchor point
- Elbow bent 90°, tucked at the side — place a small rolled towel between elbow and ribcage to maintain position
- **ER:** Rotate forearm away from body against band resistance to end range; return slowly under control
- **IR:** Face opposite direction; rotate forearm across body against band resistance to end range; return slowly
- Keep the elbow fixed throughout — movement comes from shoulder rotation only



3 × 10 ea

## Sidelying ER

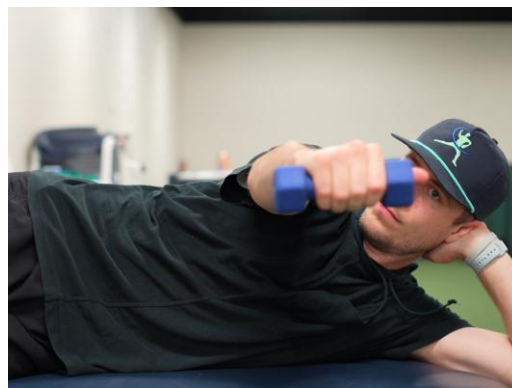
- Lie on the non-throwing side
- Throwing-side elbow bent 90°, upper arm resting against the side of the body
- Hold a light weight (1–3 lbs) or perform bodyweight
- Slowly rotate the forearm upward (external rotation) just beyond neutral
- Lower slowly under control — do not let momentum drop the arm



3 × 10

## Sidelying Flexion

- Lie on the non-throwing side
- Throwing arm resting along the side, elbow straight
- Hold a light weight (1–3 lbs) or perform bodyweight
- Slowly raise the arm forward and upward in the sagittal plane to approximately 90°–120° of flexion
- Lower slowly under control — avoid shrugging the shoulder or rotating the trunk



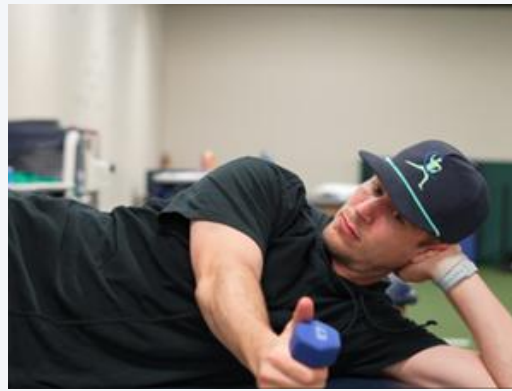
3 × 10



## Sidelying Decels

- Lie on the non-throwing side, holding a 1-3lb weight
- Throwing arm resting along the side, rotate upward as if doing sidelying ER
- Slowly punch towards the sky with the arm, turn thumb away
- Slowly bring arm downward towards the ground across your body
- Reset back to neutral with arm resting on your side

3 x 5



## Prone T & Y

- Lie face down on a table or mat, forehead resting on a rolled towel or small pad
- For the **T**: arms out to the sides at 90° abduction, thumbs pointing up
- For the **Y**: arms angled forward at approximately 120°–135° from the body, thumbs up
- Squeeze the shoulder blades together (and slightly downward for the Y) then lift both arms off the surface
- Hold 1–2 seconds at the top; lower slowly under control — do not crane the neck or compensate through the low back

3 x 5 ea

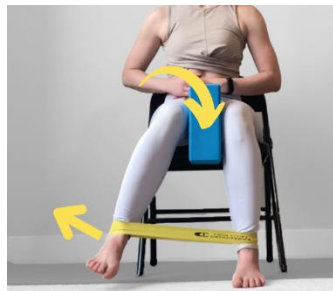


# HIP IR MOBILITY

## Hip IR Stretch

- Sit on the edge of a table or firm surface, knees bent 90°, feet hanging
- Place a folded towel or pad between the knees and rotate the foot outward
- Hold at end range without forcing; keep the trunk upright
- Return to start and repeat
- *Alternative (supine)*: Lie on back, hip and knee flexed to 90°. Let the leg fall inward (IR). Hold at end range.

2 x 20 daily



# THORACIC MOBILITY

## Quadruped Rotations

- Start on hands and knees — hands under shoulders, knees under hips, spine neutral
- Place one hand behind the head, elbow pointing out to the side
- Rotate that elbow downward toward the opposite knee, following with the eyes
- Reverse — rotate upward and open as far as possible, eyes following the elbow toward the ceiling
- Keep the lower back still throughout; movement should come entirely from the thoracic spine



2 x 10 ea daily

## Thoracic Extensions (Chair/Roller)

- Place foam roller or chair back perpendicular to the spine at mid-back (T6–T8 level)
- Support the head with both hands, elbows pointed forward and close together
- Gently extend over the roller/chair, allowing the thoracic spine to open into extension
- Hold 1–2 seconds at end range, then use the abs to return
- Shift 1–2 inches up or down and repeat to work the full thoracic segment



2 x 10 daily

**IMPORTANT: Consistency beats perfection. An arm care routine done daily at 80% beats a perfect one done sporadically. High adherence is the single strongest predictor of injury reduction across all throwing arm care research.**

