CENTER FOR SPORTS MEDICINE & ORTHOPAEDICS

Reverse Total Shoulder Arthroplasty (rTSA) Rehab Protocol

Several randomized trials and systematic reviews now show that earlier motion (within 0–14 days) produces faster early gains without increasing dislocation or overall complication risk. Protocol details should be adapted to implant design, whether the subscapularis was repaired, indication (fracture vs degenerative), and individual risk factors (bone quality, acromial/spine pain), with consistent precautions against instability and acromial/spine stress fractures in the first 6–12 weeks.

Notes on Progression and Immobilization

- Earlier motion is safe and speeds early recovery:
  - Two RCTs and recent meta-analyses show that starting PROM/AAROM/AROM within 0–14 days yields slightly better ROM at 6 weeks without higher dislocation or complication rates; by 6–12 months outcomes converge with delayed programs.
- Shorter or minimal sling time is reasonable for many:
  - Retrospective cohorts and an RCT found no increase in complications when sling use was limited to 0–2 weeks versus 3–6 weeks
  - Some fast-track pathways allow only 1 day of sling with immediate active rehab in uncomplicated, non-fracture rTSA.

CSMO MD Sling Recommendation, PT Initiation, & Notes

MD	Sling Recommendation	PT Initiation	Notes
Dr. Bell	4 weeks for uncomplicated rTSA 6 weeks for rTSA d/t fx	Within first week s/p	Light activity below shoulder height is allowed following two weeks
Dr. Miller	2 weeks for sling (as needed during day, wear at night for 2 weeks)	PT within 3-5 days s/p	Cleared for ROM and strengthening as tolerated
Dr. Sanders	6 weeks for sling	PT begins around week 2	Elbow/hand only for 2 weeks Avoid active elevation for 6 weeks w/ PROM until then

Dr. Smalley	6 weeks for sling (ABD pillow removed at 2 week follow-up) *this is formal recommendation	PT begins within 3-5 days s/p	*Does state that he is okay with being more progressive with coming out of the sling
Dr. Spangler	2 weeks for sling	PT begins around 2 weeks	

Other than the formal notes and physician-specific recommendations listed above (which do supersede the suggestions below), all surgeons were consulted and have cleared the following rehab protocol

0-2 Weeks: Protection & Gentle Activation

Sling	● Recommendations can range, but sling use is typically required full-time during this phase, assuming uncomplicated rTSA
ROM	● Begin PROM/AAROM in glenohumeral sagittal & scapular plane as tolerated ○ No specific flex, scapt, or ABD PROM precautions have been recommended, but may be reasonable to keep these under 90 deg ● No combined extension/adduction/internal rotation (behind the back postures) ● Subscap repair: limit ER to ≤20 deg ● Without subscap repair: ER can be 30 deg
Scapula, Elbow, Wrist, & Hand	● AROM as tolerated to reduce edema

- ☐ Exercise Examples (not an exhaustive list)
  - ☐ Gripper, wrist circles, forearm pronation/supination, elbow flexion/ext AROM, cervical ROM
  - ☐ Two-handed table slides, supine wand shoulder flexion, supine wand shoulder ER (not past ROM restrictions, 20 deg w/ subscap repair), pendulums, table walks
    - ☐ Most studies included in protocol have delayed pulleys until 2 weeks s/p
  - ☐ Shoulder shrugs, depressions, scapular clocks

2-6 Weeks: Progressive ROM, Guarded Loading

ROM Goals	● 120 deg of flexion by week 6 as tolerated ● ER towards 30-40 deg respecting subscapularis protection if repaired ● Delay IR behind-the-back until ≥ 6 weeks
AAROM → AROM	● Progress in scapular plane ● Avoid behind-the-back combination for at least 6 weeks ● Progress from positions that are more gravity-minimized towards inclined, then to fully vertical
Neuromuscular Re-education/ Strengthening	● Submaximal deltoid and periscapular isometrics ○ Take caution to avoid heavy isometrics at this phase with excessive strain on the acromion ○ Some resources have specifically limited MVC (maximum voluntary contraction) to no greater than 20% in this phase and listed specific recommendations at 30 second holds for 10 repetitions, twice per day with HEP ● Can begin external rotation training (not past ROM restrictions) ○ Start with supported positions, to gravity-minimized, to gravity-dependent as able ● Defer resisted IR until ≥6 weeks if subscapularis is repaired
Additional Precautions	● Keep loads light in this phase (no greater than 1 lb allowed for home) and avoid repetitive and resisted elevation above 90 degrees ● Avoid heavy support through the arm (ie: pushing up from a chair) for lower stress fracture risk

- ☐ Exercise Examples (not an exhaustive list)
  - ☐ One-handed table slides (flex, scapt, abd), incline table slides, wall slides (beginning at two hand/supported version), elbow-supported supine shoulder IR/ER, supine punch, supine alphabets, S/L ER, S/L flex, S/L ABD, short-lever shoulder flexion/scaption, sitting/standing wand-assisted shoulder flexion/scapt/abd (or cane-ranger/ball exercises)
  - ☐ Pulleys & UBE
  - ☐ Shoulder flex, abd, ext, & ER isometrics (start at low intensity, 20% MVC, and progress from there); scapular setting

6-12 Weeks: AROM Restoration & Progressive Strengthening

ROM	● Advance to more functional planes as able ● Begin VERY gentle behind-the-back ROM and may consider limiting this to back pocket or beltline in this phase
Neuromuscular Re-education/ Strengthening	● Progress with additional deltoid isotonic exercises and additional periscapular resistance exercises ● Can begin resisted ER at this phase ● Can progressively load the subscapularis with isometrics, then to light IR isotonics if repaired

- ☐ Exercise Examples (not an exhaustive list)
  - ☐ Shoulder IR isometrics, progressed to isotonics into IR and TB IR
  - ☐ Shoulder rows, extensions, prone/bent over I, Y, & T
  - ☐ Band-resisted shoulder ER, face pulls, PNF patterns (active to resisted)
  - ☐ Wand-assisted shoulder extension and horizontal adduction (behind the back)
    - ☐ Never progress through pain, excessive stretch, or subjective feelings of instability
  - ☐ Wall clocks, ball on wall (circles, alphabet, etc)

> 12 Weeks: Work, ADL, & Sport Reconditioning

ROM	● Can begin more progressive behind-the-back ROM ○ Never to progress through pain or feelings of instability
Neuromuscular Re-education/ Strengthening	● Gradual progressions into overhead ranges as tolerated ● Most functional gains and strength plateau by ~6 months ● It is also in this phase that is suggested for gentle progression into WBing motions, from more vertical positions to gradually-lowered positions
Return to Activity	● Non-contact and non-impact sports often resume by 3-6 months as tolerated (most commonly cited non-contact sports were golf, swimming, & tennis) ○ Use caution with graded progression and avoidance of maximal overhead loads if acromial/spine symptoms emerge

- ☐ Exercise Examples (**at this phase, exercise progression can be more patient-specific to reflect their goals and remaining limitations; not an exhaustive list**)
  - ☐ Wall push ups, shoulder taps, overhead press
  - ☐ Additional progression of all exercises mentioned in previous phases with further loading
  - ☐ May include multi-body movement patterns: suitcase/farmer carries, squat/deadlift

Potential Complications

Instability/Dislocation

- Contemporary rates ~0.7-3.6%
    - Risk is higher with early combined add/IR/ext and inadequate soft-tissue tension; early avoidance of those positions plus graded ROM lowers risk

Acromial/Scapular Spine Fracture

- Incidence ~1.8-5.2%
    - Risk rises with osteopenia, greater deltoid lengthening
    - Avoid heavy or repetitive elevation above 90 deg and sudden resisted deltoid loading for 6-12 weeks

Scapular Notching

- Radiographic incidence varies `10-30%
    - Associated with worse ROM and functional scores with long-term follow up
    - Minimized by surgical technique
    - Rehab should be focused on improving scapular mechanics and avoiding painful adduction/crossbody impingement arcs, especially into early-mid rehab

Infection/Revision

- Infection (~1.2%) and revisions (~2.6%) in primary rTSA
    - Wound care and early functional rehab do not increase these risks in trials

Conclusion

In sum, a modern rTSA pathway supports PROM/AAROM/AROM within 0–14 days, limited sling use (often ≤2 weeks), early scapular and deltoid activation with cautionary loading to protect the acromion/spine, ER restrictions if the subscapularis was repaired/medialized approach, and progression to strengthening from 6 weeks onward. These elements align with RCTs and systematic reviews showing quicker early recovery without added instability and with complication-aware loading to protect vulnerable structures.

**Additional version of in-text citation and list of resources available upon request*