

Glenwood Orthopedic Center Rehabilitation Playbook Series

Post-Surgical Progressions for Returning to Shoulder Sports

The intent of this information is to inform the treating clinician on the evidence based considerations to be used as a guideline regarding the safe return to athletics through a graded progression of sport specific activities. This is not a substitute for appropriate clinical decision making but a supplement to that effect. If at any time a clinician feels uncertain about a progression or patient presentation they are strongly encouraged to discuss this with the referring physician and his/her team. If specific comorbidities create unattainable goals for effective return to sport (RTS), discuss this with the treating physician group before continuing.

Table of Contents:

Page 1..... RTS Progression Criteria
Page 2..... Overhead Throwing Progressions
Page 3..... Baseball Pitching Progressions
Page 4..... Softball Pitching Progressions
Page 5..... Swimming Progressions

Page 6..... Volleyball Progressions
Page 7..... Golf Progressions
Page 8..... Tennis Progressions
Page 9..... Appendices
Page 10..... Abbreviations & References

Criteria Required for Any Post-Operative Shoulder Sport Specific Progressions¹:

1. Sport progression clearance from referring physician.
2. Full and pain free elevation and return to all ADLs.
3. Total ER/IR arc of ROM in 90° ABD within 7° of uninjured.¹
4. Pain free Hawkins Kennedy, relocation 90/90 test & SLAP testing.¹
5. MMT with Hand Held Dynamometer¹:
 - ER:IR and ER:ABD Ratios of 70%.^{2,3}
 - Flex and ABD LSI >75%.³
6. Front & side plank on hands for 60" with proper scapular form¹ (see appendix A).
7. Prone ball flips for 30" with proper form maintained without pain¹ (see appendix B).
8. 2# rhythmic IR bounces at wall x 10 with proper form maintained without pain¹ (see appendix C).
9. 1# ball toss/catch for 20" to rebounder with proper form maintained without pain¹ (see appendix D).



VVH Adapted Overhead Throwing Progressions¹

✪ Perform every other day.

✪ Stay at same pain free training stage for 2-3 sessions before progressing stages. If pain presents regress to last pain free stage.

- Step into all throws with a crow hop.
- “Warm up” = 5-10 min jog and 10 throws at 20-30 feet.

Stage 1: Warm up → 45ft x 25 throws → Rest 5 minutes (2 sets).

Stage 2: Warm up → 45ft x 25 throws → Rest 5 minutes (3 sets).

Stage 3: Warm up → 60ft x 25 throws → Rest 5 minutes (2 sets).

Stage 4: Warm up → 60ft x 25 throws → Rest 5 minutes (3 sets).

Stage 5: 60ft x 10 throws → 90ft x 20 throws → Rest 5 minutes (2 sets).

Stage 6: 60ft x 7 throws → 90ft x 18 throws → Rest 5 minutes (3sets).

Stage 7: 60ft x 5 throws → 90ft x 5 throws → 120ft x 15 throws → Rest 5 minutes (2 sets).

Stage 8: 60ft x 5 throws → 90ft x 10 throws → 120ft x 15 throws → rest 5 minutes (3 sets).



VVH Adapted Baseball Pitching from the Mound Progressions¹

- ❖ Must successfully complete the “Overhead Throwing Progressions” above before starting these mound pitching progressions.
- ❖ Stay at same pain free training stage for 2-3 sessions before progressing stages. If pain presents regress to last pain free stage of that phase.

Phase 1: Fastballs Only

• Warm up = throws from flat ground using pitching mechanics: 60ft x 5 throws → 90ft x 10 throws → 120ft x 15 throws → rest 5 minutes.

Stage 1: Warm up → 15 throws off mound at 50% max.

Stage 2: Warm up → 30 throws off mound at 50% max.

Stage 3: Warm up → 45 throws off mound at 50% max.

Stage 4: Warm up → 60 throws off mound at 50% max.

Stage 5: Warm up → 70 throws off mound at 50% max.

Stage 6: 45 throws off mound at 50% max → 30 throws off mound at 75% max.

Stage 7: 30 throws off mound at 50% max → 45 throws off mound at 75% max.

Stage 8: 65 throws off mound at 75% max → 10 throws off mound at 50% max.

Stage 9: 60 throws off mound at 75% max → 15 throws off mound in batting practice.

Stage 10: 50-60 throws off mound at 75% max → 30 throws off mound in batting practice

Stage 11: 45-50 throws off mound at 75% max → 45 throws off mound in batting practice.

Phase 2: Off Speed Pitching

Stage 1: 30 throws off mound at 75% max → 15 breaking balls off mound at 50% max → 45 throws off mound in batting practice.

Stage 2: 30 throws off mound at 75% max → 30 breaking balls off mound at 75% max → 30 throws off mound in batting practice.

Stage 3: 30 throws off mound at 75% max → 75 throws off mound in batting practice while gradually increasing amount of breaking balls.

Stage 4: Simulated game pitching progressions with increasing pitch count by 15 each outing as tolerated.



VVH Adapted Softball Windmill Pitching from the Mound Progressions¹

❖ Must successfully complete the “Overhead Throwing Progressions” above before starting these mound pitching progressions.

❖ Stay at same pain free training stage for 2-3 sessions before progressing stages. If pain presents regress to last pain free stage of that phase.

- Warm up = throws from flat ground: 60ft x 7 throws → 90ft x 18 throws → rest 5 minutes.

Stage 1: Warm up → 20 windmills off mound at 50% max.

Stage 2: Warm up → 30 windmills off mound at 50% max.

Stage 3: Warm up → 40 windmills at 50% max → 15 windmills off mound at 75% max.

Stage 4: Warm up → 20 windmills at 50% max → 35 windmills off mound at 75% max.

Stage 5: Warm up → 50 windmills at 75% max → 15 windmills off mound at 50% max.

Stage 6: Warm up → 60 windmills at 75% max → 15 windmills off mound in batting practice.

Stage 7: Warm up → 40 windmills at 75% max → 15 windmills off mound at 90% max → 20 breaking balls at 50% max → 30 windmills off mound in batting practice.

Stage 8: Warm up → 30 windmills at 75% max → 15 windmills off mound at 90-100% max → 30 breaking balls at 75% max → 30 windmills off mound in batting practice.

Stage 9: Simulated game play with gradual increase of breaking balls and pitch count increase of 15 each outing.

Stage 10: Competition with continued increase to pitch count by 15 each outing returning to full return.



VVH Adapted Swimming Progressions¹

🔄 Stay at same pain free training weekly distance and intensity for 2-3 sessions before progressing distance and intensity.

- It takes roughly 3x the length of time an athlete has been away from swimming to return to their prior level of swimming.
- Ok to be in water with involved arm held at the side using fins at 6 weeks with MD approval.
- Restricted strokes allowed at 12-16 weeks with MD approval.

Training Guidelines:

1. Complete training sessions every other day (≈3 days/week).
2. Start at 25% of the athlete's previous distance and 50% max intensity without use of paddles and vary the stroke pattern (excluding butterfly initially).
4. Progress distance 500-1000 yards/week (Initiate paddle use once able to do 5000 yards without pain).
6. OK to do butterfly if paddle use and > 5000 yards is pain free for 2-3 sessions.



VVH Adapted Volleyball Progressions⁴

- ❖ Perform Stage 1 every 3-4 days for the first 2 weeks of your hitting training program.
- ❖ Then progress to Stage 2 every 2-3 days until week 5 of your hitting training program.
- ❖ Then move to every other day training and if no soreness is present advance 1 Stage level each hitting day.

- If soreness after a hitting stage persists for more than 1 hour after, or presents the following day: take an additional day off and begin at the last hitting stage that did not cause soreness.
- If sore during warm up but is absent within the first 15 hits, regress to the last hitting stage that did not cause soreness.
- If the patient becomes sore during the workout after the first 15 hits, stop the session, take an additional day off and begin at the last hitting stage that did not cause soreness.

Resting Rules:

1. For Attack Hitting: Rest 45 seconds between each hit and rest 7 minutes between each set.
2. For Serve Hitting: Rest 30 seconds between serves and rest 6 minutes between each set.

Stage 1: 20 Warm up hits at 40-50% max → 8 Attack hits at 50% max (2 sets) → 10 easy full-court hits.

Stage 2: 20 Warm up hits at 40-50% max → 8 Attack hits at 50% max (2 sets) → 4 serves at 50% max → 10 easy full-court hits.

Stage 3: 20 Warm up hits at 50% max → 9 Attack hits at 50% max (3 sets) → 4 serves at 50% max (2 sets) → 10 easy full-court hits.

Stage 4: 20 Warm up hits at 50% max → 10 Attach hits at 50% max (3 sets) → 5 serves at 50% max (3 sets) → 10 easy full-court hits.

Stage 5: 20 Warm up hits at 50-75% max → 8 Attach hits at 75% max (3 sets) → 4 serves at 75% max (3 sets) → 15 easy full-court hits.

Stage 6: 30 Warm up hits at 50-75% max → 8 Attach hits at 75% max (3 sets) → 4 serves at 75% max (3 sets) → 15 easy full-court hits.

Stage 7: 30 Warm up hits at 50-75% max → 10 Attach hits at 75% max (4 sets) → 4 serves at 75% max (4 sets) → 15 easy full-court hits.

Stage 8: 30 Warm up hits at 50-75% max → 8 Attach hits at 75-100% max (4 sets) → 5 serves at 75% max (4 sets) → 20 easy full-court hits.

Stage 9: 30 Warm up hits at 50-75% max → 10 Attach hits at 75-100% max (4 sets) → 6 game placement serves (4 sets) → 20 easy full-court hits.

Stage 10: Full scrimmage.



VVH Adapted Golf Progressions¹

✪ Perform every other day.

✪ Ensure pain free status from previous day's session before progressing to next day's program. If pain presents regress to last pain free day's program.

- Have stroke form assessed and cleared by golf coach before educating/encouraging progressions.
- Do not swing through pain.
- Warm up with 5 minutes of gentle shoulder AROM and stretching into swing motion.

Week 1:

Day 1: 10 putts → 10 chips → Rest 3 minutes → 15 chips.

Day 2: 15 putts → 15 chips → Rest 3 minutes → 25 chips.

Day 3: 20 putts → 20 chips → Rest 3 minutes → 20 putts →
20 chips → Rest 3 minutes → 10 chips → 10 short irons.

Week 2:

Day 1: 20 chips → 10 short irons → Rest 3 minutes →
10 short irons.

Day 2: 20 chips → 15 short irons → Rest 3 minutes →
10 short irons → 15 chips.

Day 3: 15 short irons → 10 medium irons → Rest 3 minutes →
20 short irons → 15 chips.

Week 3:

Day 1: 15 short irons → 10 medium irons → Rest 3 minutes →
5 long irons → 15 short irons → rest 3 minutes → 20 chips.

Day 2: 15 short irons → 10 medium irons → 10 long irons →
Rest 3 minutes → 10 short irons → 10 medium irons →
5 long irons → 5 woods.

Day 3: 15 short irons → 10 medium irons → 10 long irons →
Rest 3 minutes → 10 short irons → 10 medium irons →
10 long irons → 10 woods.

Week 4:

Day 1: 15 short irons → 10 medium irons → 10 long irons
→ 10 drives → Rest 3 minutes (2 sets).

Day 2: Play 9 holes.

Day 3: Play 9 holes.

Week 5:

Day 1: Play 9 holes.

Day 2: Play 9 holes.

Day 3: Play 18 holes.



VVH Adapted Tennis Progressions¹

❖ Perform every other day.

❖ Stay at same training stage for 2-3 sessions before progressing stages. If pain presents regress to last pain free stage.

- Have stroke form assessed and cleared by tennis coach before educating/encouraging progressions.
- Avoid wallboard / backboard practice as it decreases time between your strokes. Use a partner or ball machine whenever possible.
- Avoid Top/underspin until stage 6 and beyond.

- Warm up = 5-10 min jog and 5 minutes of gentle shoulder AROM and stretching into stroke motions.

Stage 1: Warm up → 20 forehand groundstrokes with foam ball via Partner → 20 backhand groundstrokes with foam ball via Partner → 5 minute rest (2 sets).

Stage 2: Repeat stage 1 with a low compression orange ball instead of foam.

Stage 3: Repeat Stage 1 with a medium compression green ball instead of foam.

Stage 4: Repeat Stage 1 with a regular tennis ball.

Stage 5: Warm up → Rally with partner from the baseline, hitting controlled ground strokes up to 50 or 60 total Alternating between forehand and backhand → rest 5 minutes (2 sets).

Stage 6: Warm up → Rally ground strokes from baseline for 15 minutes with partner / ball machine → Rest 5 minutes → hit 10 forehand volleys and 10 backhand volleys contacting ball in front of body (2 sets).

Stage 7: Ground strokes for 25 minutes with 20% volley mix → 10 simulated serves without a ball → 10 serves with a foam or low compression ball → perform 10 serves with tennis ball at 75% max → 10 minutes of ground strokes.

Stage 8: 30 minutes of groundstrokes with 20% volley mix → 10 serves with a foam or low compression ball → perform 10 serves with tennis ball at 75% max → rest 5 minutes → perform 10 serves with tennis ball at 75% max → 15 minutes of ground strokes.

Stage 9: 30 minutes of groundstrokes with 20% volley mix → 20 serves with a foam or low compression ball → perform 20 serves with tennis ball at 75% max → rest 5 minutes → perform 20 serves with tennis ball at 75% max → 15 minutes of ground strokes.

Stage 10: Continue training without pain or excessive UE fatigue while working up to 60-80 serves into a training session before returning to match play.



Appendix A: Front & Side Plank Positions



Maintain plank on hands for 60" with proper scapular form¹ in each position.

Appendix B: Prone Ball Flips



Laying prone on a table, maintain proper scapular form¹ and repetitively drop and catch ball for 30 seconds.



Appendix C: Rhythmic IR Bounces at Wall



Maintain proper scapular form¹ while repetitively bouncing 2# ball into wall for 10 repetitions.

Appendix D: Rebounder Ball Toss

Maintain proper scapular form¹ and repetitively throw and catch 1# ball for 20 seconds.



Abbreviation List:

AAROM: Active assisted range of motion
ABD: Abduction
ADD: Adduction
ADL: Activity of daily Living
AROM: Active range of motion
BT: Biceps tenodesis
BW: Body Weight
CKC: Closed kinetic chain
D/C: Discharge
DVT: Deep vein thrombosis
ER: External rotation
EXT: Extension
FT: Feet
FWB: Full weight bearing
GHJ: Glenohumeral joint
HEP: Home exercise program
IR: Internal rotation
LE: Lower extremity

LSI: Limb Symmetry Index = (Score of an involved divided by the score of the uninvolved x 100 for any given test for a % score)

MA: Medical assistant
MD: Medical doctor
Mobs: Mobilizations
NWB: Non weight bearing
PA: Physician assistant
PE: Pulmonary embolism
PLOF: Prior Level of Function
PROM: Passive range of motion
ROM: Range of motion
RP: Resting position
RROM: Resisted range of motion
RTC: Rotator Cuff
UE: Upper extremity
WB: Weight bearing
Wks: Weeks
#: Pounds
≈: Approximately
≠: Without
“: Seconds

References

1. Ellenbecker, T. et al. Sport Therapy for the Shoulder: Evaluation, Rehabilitation, and Return to Sport. *Human Kinetics*. 2017.
2. Ma, R. et al. Current Concepts in Rehabilitation for Traumatic Anterior Shoulder Instability. *Curr Rev Musculoskelet Med*. 2017; 10: 499-506.
3. Gunderson Health System Arthroscopic Bankart Repair Rehabilitation Program.
4. Hurd et al. Data-Based Interval Hitting Program for Female College Volleyball Players. *Sports Health*. Nov.Dec 2009: 522-530.

ValleyOrtho

 VALLEY VIEW

