

This protocol provides appropriate guidelines for a safe return to throwing and pitching after shoulder and/or elbow injury. The protocol draws evidence from the current literature and accounts for preferences of the providers at Allina Health Orthopedics. The program may be modified by the referring provider for an individual patient. If questions arise regarding the application of the protocol or the progress of the patient, contact Allina Health Orthopedics: (952) 946-9777

Towel Drill

Prior to performing the throwing motion, **proper warm-up is important** to prevent injury and optimize performance. Proper warm-up should consist of 5-10 minutes of dynamic endurance activities, such as jogging, and the Throwing Day Exercises (**Appendix A**).

Emphasis should be on proper throwing mechanics throughout the entire return to throw program:

- Set the scapula in a retracted position
- Develop a proper balance point
- Use trunk and core musculature throughout throwing motion
- Keeping the elbow near shoulder level and stay on top of the ball
- Perform a good follow through

Towel Drill

Day 1:	2x10	Rest 1 minute between sets
Day 2:	No Throwing – Off day exercises (Appendix B)	
Day 3:	3x10	Rest 1 minute between sets
Day 4:	No Throwing – Off day exercises (Appendix B)	
Day 5:	4x10	Rest 1 minute between sets
Day 6:	No Throwing – Off day exercises (Appendix B)	

Upon the completion of the towel drill, a proper cool down should be performed. Perform the sleeper stretch and cross body stretch 3-5 times for 30 seconds. Then, ice the shoulder or elbow for 10-15 minutes.

Return to Throw Protocol – Phase I

Phase I of the Return to Throw Protocol is designed to take place over a 7-10 day period. **Throwing should be pain free** with no sharp pain during throwing and no progressive increase in soreness.

Emphasis should be on accuracy and proper throwing mechanics throughout the entire return to throw program:

- Set the scapula in a retracted position
- Develop a proper balance point
- Use trunk and core musculature throughout throwing motion
- Keeping the elbow near shoulder level and stay on top of the ball
- Perform a good follow through

Prior to throwing, **proper warm-up is important** to prevent injury and optimize performance:

- Five to 10 minutes of dynamic endurance activities, such as jogging
- Throwing Day Exercises (Appendix A)
- Towel drill: **3x10**
- Ten to 15 warm-up throws gradually backing up to the Phase I throwing distance

Return to Throw – Phase I

Day 1:	10 throws at 15-20 feet REST – 2 min	10 throws at 15-20 feet.
Day 2:	No Throwing – Off day exercises (Appendix B)	
Day 3:	10 throws at 20 feet REST – 2 min	15 throws at 25-30 feet.
Day 4:	No Throwing – Off day exercises (Appendix B)	
Day 5:	15 throws at 30-45 feet REST – 2 min	10 throws at 30-45 feet.
Day 6:	No Throwing – Off day exercises (Appendix B)	
Day 7:	15 throws at 45-60 feet REST – 2 min	15 throws at 45-60 feet.
Day 8:	No Throwing – Off day exercises (Appendix B)	

After throwing, a proper cool down should be performed. Perform the sleeper stretch and cross body stretch 3-5 times for 30 seconds. Then, ice the shoulder or elbow for 10-15 minutes.

The rate of advancement through the return to throw protocol may vary between athletes. If you are experiencing soreness during your throwing session or the next day, take an extra day off. Do not throw again until all soreness has resolved. The next throwing session should begin again at the previous distance in which no soreness was encountered.

Return to Throw Protocol – Phase II

Phase II of the Return to Throw Protocol is designed to take place over a 7-10 day period. Focus on solidifying good mechanics while beginning to gradually increase throwing velocity. **By the end of this phase, you should be able to throw the ball on a line to your partner.** This does not mean throwing as hard as you can. As always, all movements should be pain free with no sharp pain during throwing and no progressive increase in soreness.

Emphasis should be on accuracy and proper throwing mechanics throughout the entire return to throw program:

- Set the scapula in a retracted position
- Develop a proper balance point
- Use trunk and core musculature throughout throwing motion
- Keeping the elbow near shoulder level and stay on top of the ball
- Perform a good follow through

Prior to throwing, **proper warm-up is important** to prevent injury and optimize performance:

- Five to 10 minutes of dynamic endurance activities, such as jogging
- Throwing Day Exercises (Appendix A)
- Towel drill: **2x10**
- Ten to 15 warm-up throws gradually backing up to the Phase II throwing distance

Return to Throw – Phase II

Day 1: 15 throws at 45-60 feet, REST – 2 min	15 throws at 45-60 feet.
Day 2: No Throwing – Off day exercises (Appendix B)	
Day 3: 20 throws at 45-60 feet REST – 2 min	15 throws at 60-75 feet.
Day 4: No Throwing – Off day exercises (Appendix B)	
Day 5: 20 throws at 60-75 feet REST – 2 min	15 throws at 75-90 feet.
Day 6: No Throwing – Off day exercises (Appendix B)	
Day 7: 20 throws at 75-90 feet REST – 2 min	20 throws at 75-90 feet.
Day 8: No Throwing – Off day exercises (Appendix B)	

After throwing, a proper cool down should be performed. Perform the sleeper stretch and cross body stretch 3-5 times for 30 seconds. Then, ice the shoulder or elbow for 10-15 minutes.

The rate of advancement through the return to throw protocol may vary between athletes. If you are experiencing soreness during your throwing session or the next day, take an extra day off. Do not throw again until all soreness has resolved. The next throwing session should begin again at the previous distance in which no soreness was encountered.

Return to Throw Protocol – Phase III

Phase III of the Return to Throw Protocol is designed to take place over a 10-12 day period. **By the end of this phase, you should be able to participate in all fielding positions without any restrictions.** If you are a pitcher or elite level position player, continue to progress into Phase IV and the Return to Pitch Protocol.

Continue to emphasize proper throwing mechanics throughout the entire return to throw program:

- Set the scapula in a retracted position
- Develop a proper balance point
- Use trunk and core musculature throughout throwing motion
- Keeping the elbow near shoulder level and stay on top of the ball
- Perform a good follow through

Prior to throwing, **proper warm-up is important** to prevent injury and optimize performance:

- Five to 10 minutes of dynamic endurance activities, such as jogging
- Throwing Day Exercises (Appendix A)
- Towel drill: **1x10**
- Ten to 15 warm-up throws gradually backing up to the Phase III throwing distance

Return to Throw – Phase III

Day 1:	20 throws at 75-90 feet	REST – 2 min	15 throws 75-90 feet.
Day 2:	No Throwing – Off day exercises (Appendix B)		
Day 3:	25 throws at 75-90 feet	REST – 2 min	15 throws 75-90 feet.
Day 4:	20 throws at 75-90 feet	REST – 2 min	20 throws 75-90 feet.
Day 5:	No Throwing – Off day exercises (Appendix B)		
Day 6:	15 throws at 90-120 feet	REST – 2 min	15 throws at 90-120 feet.
Day 7:	No Throwing – Off day exercises (Appendix B)		
Day 8:	20 throws at 90-120 feet	REST – 2 min	15 throws at 90-120 feet
Day 9:	No Throwing – Off day exercises (Appendix B)		
Day 10:	20 throws at 90-120 feet	REST – 2 min	20 throws at 90-120 feet.
Day 11:	No Throwing – Off day exercises (Appendix B)		

After throwing, a proper cool down should be performed. Perform the sleeper stretch and cross body stretch 3-5 times for 30 seconds. Then, ice the shoulder or elbow for 10-15 minutes.

The rate of advancement through the return to throw protocol may vary between athletes. If you are experiencing soreness during your throwing session or the next day, take an extra day off. Do not throw again until all soreness has resolved. The next throwing session should begin again at the previous distance in which no soreness was encountered.

Return to Throw Protocol – Phase IV

Phase IV of the Return to Throw Protocol is designed to take place over a 7-10 day period. This phase is designed for advanced throwers and pitchers including varsity high school, collegiate, and professional athletes. **The focus of this phase is ongoing proper throwing mechanics at distances greater than 120 feet.** At the beginning of this phase, focus on getting the ball to your partner in the air. As you progress, you should increase the velocity of your throws.

Continue to emphasize proper throwing mechanics throughout the entire return to throw program:

- Set the scapula in a retracted position
- Develop a proper balance point
- Use trunk and core musculature throughout throwing motion
- Keeping the elbow near shoulder level and stay on top of the ball
- Perform a good follow through

Prior to throwing, **proper warm-up is important** to prevent injury and optimize performance. Proper warm-up should consist of:

- Five to 10 minutes of dynamic endurance activities, such as jogging
- Throwing Day Exercises (Appendix A)
- Towel drill: **1x10**
- Ten to 15 warm-up throws gradually backing up to the Phase III throwing distance

Return to Throw – Phase IV

Day 1: 25 throws at 120 feet	REST – 2 min	10 throws at 135-150 feet.
Day 2: 20 throws at 120 feet	REST – 2 min	20 throws at 120 feet. No long toss
Day 3: No Throwing – Off day exercises (Appendix B)		
Day 4: 25 throws at 120 feet	REST – 2 min	10 throws at 135-150 feet.
Day 5: 20 throws at 120 feet	REST – 2 min	20 throws at 120 feet. No long toss
Day 6: No Throwing – Off day exercises (Appendix B)		
Day 7: 25 throws at 120 feet	REST – 2 min	10 throws at 135-150 feet.
Day 8: 25 throws at 120 feet	REST – 2 min	10 throw at 60 feet (spot throw)
Day 9: 25 throw at 90 feet	REST – 2 min	20 throw at 60 feet (spot throw)
Day 10: No Throwing – Off day exercises (Appendix B)		
Day 11: PLAY		

After throwing, a proper cool down should be performed. Perform the sleeper stretch and cross body stretch 3-5 times for 30 seconds. Then, ice the shoulder or elbow for 10-15 minutes.

The rate of advancement through the return to throw protocol may vary between athletes. If you are experiencing soreness during your throwing session or the next day, take an extra day off. Do not throw again until all soreness has resolved. The next throwing session should begin again at the previous distance in which no soreness was encountered.

Junior Return to Pitch Protocol - Phase V

Goal of this phase is to return to throwing off the mound over 3 weeks in a bullpen capacity.
Each week will consist of 3 days of **throwing on non-consecutive days**.

Week 1
Day 1: 10 throws on flat ground at 75% intensity to a catcher working on accuracy.
Day 2: 10 throws off the mound at 75% intensity to a catcher working on accuracy.
Day 3: 10 throws off the mound at 75% intensity to a catcher working on accuracy.
Week 2
Day 1: 15 throws off the mound at 75% intensity to a catcher working on accuracy.
Day 2: 15 throws off the mound at 75-90% intensity to a catcher working on accuracy.
Day 3: 20 throws off the mound at 75-90% intensity to a catcher working on accuracy.
Week 3
Day 1: 20 throws off the mound at 100% intensity to a catcher working on accuracy.
Day 2: 25 throws off the mound at 100% intensity to a catcher working on accuracy.
Day 3: 30 throws off the mound at 100% intensity to a catcher working on accuracy.

Junior Return to Pitch Protocol - Phase VI

Return to Games (Pitch Count Guidelines)

Phase 1 (3 weeks)
80 pitches max per week. Max of 40 pitches per game.
Less than 20 pitches in a game = 1 day of rest from pitching.
More than 20 pitches in a game = 2 days of rest from pitching.
Phase 2 (3 weeks)
120 pitches max per week. Max of 60 pitches per game.
Less than 40 pitches in a game = 1 day of rest from pitching.
More than 40 pitches in a game = 2 days of rest from pitching.
Phase 3 (3 weeks)
160 pitches max per week. Max of 80 pitches per game.
Less than 40 pitches in a game = 1 day of rest from pitching.
Between 40-60 pitches in a game = 2 days of rest from pitching.
Between 60-80 pitches in a game = 3 days of rest from pitching.

Senior Return to Pitch - Phase V

Goal of this phase is to return to throwing off the mound over 3 weeks in a bullpen capacity.
Each week will consist of 3 days of **throwing on non-consecutive days.**

Week 1
Day 1: 20 throws on flat ground at 75% intensity to a catcher working on accuracy.
Day 2: 20 throws off the mound at 75% intensity to a catcher working on accuracy.
Day 3: 20 throws off the mound at 75% intensity to a catcher working on accuracy.
Week 2
Day 1: 25 throws off the mound at 75% intensity to a catcher working on accuracy.
Day 2: 25 throws off the mound at 75-90% intensity to a catcher working on accuracy.
Day 3: 30 throws off the mound at 75-90% intensity to a catcher working on accuracy.
Week 3
Day 1: 30 throws off the mound at 100% intensity to a catcher working on accuracy.
Day 2: 35 throws off the mound at 100% intensity to a catcher working on accuracy.
Day 3: 40 throws off the mound at 100% intensity to a catcher working on accuracy.

Senior Return to Pitch - Phase VI

Return to Games (Pitch Count Guidelines)

Phase 1 (2 weeks)
50 pitches max per outing. No more than 3 outings per week.
1 day of rest between outings.
Phase 2 (2 weeks)
65 pitches max per outing. No more than 2 outings per week.
2 days rest between outings.
Phase 3 (2 weeks)
80 pitches max per outing. No more than 2 outings per week.
3 days rest between outings.
Phase 4 (2 weeks)
100 pitches max per outing. No more than 2 outings per week.
4 days rest between outings.

Elite Return to Pitch - Phase V

Goal of this phase is to return to throwing off the mound over 3 weeks in a bullpen capacity.
Each week will consist of 3 days of **throwing on non-consecutive days**.

Week 1
Day 1: 25 throws on flat ground at 75% intensity to a catcher working on accuracy.
Day 2: 25 throws off the mound at 75% intensity to a catcher working on accuracy.
Day 3: 25 throws off the mound at 75% intensity to a catcher working on accuracy.
Week 2
Day 1: 30 throws off the mound at 75% intensity to a catcher working on accuracy.
Day 2: 30 throws off the mound at 75-90% intensity to a catcher working on accuracy.
Day 3: 35 throws off the mound at 75-90% intensity to a catcher working on accuracy.
Week 3
Day 1: 35 throws off the mound at 100% intensity to a catcher working on accuracy.
Day 2: 40 throws off the mound at 100% intensity to a catcher working on accuracy.
Day 3: 45 throws off the mound at 100% intensity to a catcher working on accuracy.

Elite Return to Pitch - Phase VI

Return to Games (Pitch Count Guidelines)

Phase 1 (2 weeks)
50 pitches max per outing. No more than 3 outings per week.
1 day of rest between outings.
Phase 2 (2 weeks)
65 pitches max per outing. No more than 2 outings per week.
2 days rest between outings.
Phase 3 (2 weeks)
80 pitches max per outing. No more than 2 outings per week.
3 days rest between outings.
Phase 4 (2 weeks)
100 pitches max per outing. No more than 2 outings per week.
4 days rest between outings.

Appendix A – Throwing Day Exercises

Prior to throwing, proper warm-up is important to prevent injury and optimize performance.

Dynamic Warm-Up: Five to 10 minutes of dynamic endurance activities AND throwing day exercises:

1) External Rotation

50 repetitions

- Squeeze shoulder blades
- Rotate throwing arm up and down like a windshield wiper
- Moderate tempo
- Once you can do 50 with minimal fatigue, hold baseball in hand

1)

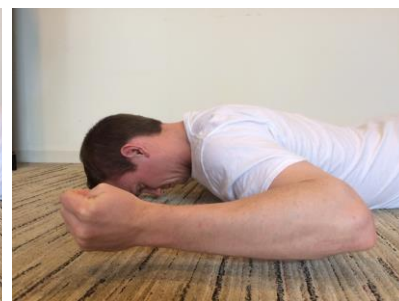
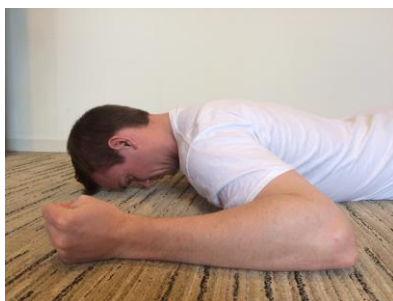


2) 'W'

20 repetitions

- Lie on stomach
- Squeeze shoulder blades toward back pockets and lift arms 4 inches off ground
- Relax and repeat
- Moderate tempo

2)



3) Sleeper Stretch

3 x 30 seconds

- Lie on dominant side
- Press arm gently toward floor until gentle stretch is felt at back of shoulder

3)



4)



4) Cross Body Stretch

3 x 30 seconds

- Pull dominant arm across body until gentle stretch is felt at back of shoulder

Appendix B – Off Day Exercises

Perform these exercises on days that you do not throw to prevent shoulder injury / optimize performance.

1) External Rotation

2 x 50

- Squeeze shoulder blades
- Rotate throwing arm up and down like a windshield wiper
- Moderate tempo
- Once you can do 50 with minimal fatigue, hold baseball in hand

1)

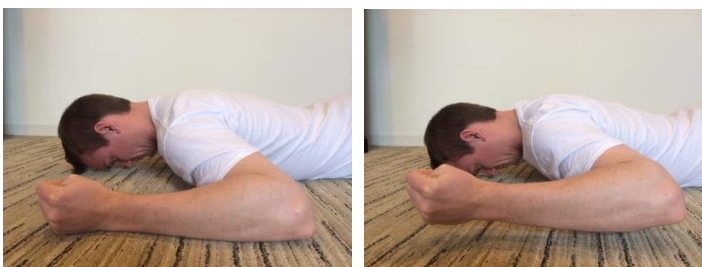


2) 'W'

2 x 30

- Lie on stomach
- Squeeze shoulder blades toward back pockets and lift arms 4 inches off ground
- Relax and repeat
- Moderate tempo

2)



3) Full Can

4)

2 x 30

- Stand tall
- Lift arms to shoulder height making a V shape
- Squeeze shoulder blades as arms return to sides

3)



4) Wall Bounce

3 x 30 seconds

- Throwing arm in 90/90 position (like release point)
- Bounce basketball on wall quickly

5) Sleeper Stretch

3 x 30 seconds

- Lie on dominant side
- Press arm gently toward floor until gentle stretch is felt at back of shoulder

5)



6)



6) Cross Body Stretch

3 x 30 seconds

- Pull dominant arm across body until gentle stretch is felt at back of shoulder