



Central Kansas Orthopedic Group

SURGICAL SPECIALISTS & PHYSICAL THERAPY

Interval Throwing Program

Below throwing program is intended for all athletes looking to return to prior competitive level after injury/surgery to throwing arm. Two separate programs are provided depending on the athletes age. The programs are broken down into individual steps, with the goal of completing each step without pain or complication. In order to maintain physical condition needed to compete at a high level, it is recommended the athlete supplements in a weight training and flexibility program.

Throwing: Completed every other day. In order to advance, each step must be completed without pain or complications. Throwing motion should incorporate entire body, in order to limit excess stress on throwing arm (i.e. Crow Hop Method or Step Behind Method)

Weight Training: Should be completed on throwing days (complete throwing first). Utilize low weight and high reps.

Flexibility Training: Should be completed on non-throwing days to maximize recovery.

Requirements for Participation in Throwing Program

1. Physician Clearance
2. Full Pain-Free AROM
3. 5/5 Shoulder Strength All Planes
 - a. Flex/Abd/IR/ER/Lower Trap
4. 26 Reps of Closed Kinetic Chain Upper Extremity Test
 - a. Athlete Must Demonstrate Proper Mechanics

Prior to attempting any step in the throwing program, a proper dynamic warm-up should be completed. This should include jogging and plyometric warm up (i.e. high knees, butt kicks, lunges, etc.) Once the entire body is warmed up, the athlete may initiate Warm-Up Throwing. In the table below, the term Warm-Up will be used for Warm-Up Throwing. It is recommended that Warm-Up Throwing begin at ~30 feet, with only the needed throws in order to progress to full distance for that step.

Requirements for Position Specific Drills

1. Position Players
 - a. Total of 50 throws at 180' (**Step 11**) Symptom Free
2. Pitchers
 - a. Completion of **Step 8**
 - i. At this time may continue with current progression or skip to **Step 14**

If the athlete is also looking to return to batting, they should participate on a gradual basis. The progression would go as follows.

Dry Swings-> Tee Work-> Soft Toss-> Front Toss-> BP

14+ Guidelines

45'	60'	90'	120'	150'	180'	180'
Step 1 Warm-Up 25 Throws <i>Rest 10</i> Warm-Up 25 Throws	Step 3 Warm-Up 25 Throws <i>Rest 10</i> Warm-Up 25 Throws	Step 5 Warm-Up 25 Throws <i>Rest 10</i> Warm-Up 25 Throws	Step 7 Warm-Up 25 Throws <i>Rest 10</i> Warm-Up 25 Throws	Step 9 Warm-Up 25 Throws <i>Rest 10</i> Warm-Up 25 Throws	Step 11 Warm-Up 25 Throws <i>Rest 10</i> Warm-Up 25 Throws	Step 13 Warm-Up 25 Throws <i>Rest 5-10</i> Warm-Up 25 Throws <i>Rest 5-10</i> Warm-Up 25 Throws <i>Rest 5-10</i> Warm-Up 25 Throws <i>Rest 5-10</i> Warm-Up 15 Throws <i>Work to 90'</i>
Step 2 Warm-Up 25 Throws <i>Rest 5-10</i> Warm-Up 25 Throws <i>Rest 5-10</i> Warm-Up 25 Throws	Step 4 Warm-Up 25 Throws <i>Rest 5-10</i> Warm-Up 25 Throws <i>Rest 5-10</i> Warm-Up 25 Throws	Step 6 Warm-Up 25 Throws <i>Rest 5-10</i> Warm-Up 25 Throws <i>Rest 5-10</i> Warm-Up 25 Throws	Step 8 Warm-Up 25 Throws <i>Rest 5-10</i> Warm-Up 25 Throws <i>Rest 5-10</i> Warm-Up 25 Throws	Step 10 Warm-Up 25 Throws <i>Rest 5-10</i> Warm-Up 25 Throws <i>Rest 5-10</i> Warm-Up 25 Throws	Step 12 Warm-Up 25 Throws <i>Rest 5-10</i> Warm-Up 25 Throws <i>Rest 5-10</i> Warm-Up 25 Throws	

Flat Ground for Pitchers	
Step 14 Warm-Up 10-15 Throws 60' 10 Throws 90' 10 Throws 120' 20-30 Pitches 60'	Step 15 Warm-Up 10-15 Throws 60' 10 Throws 90' 10 Throws 120' 20-30 Pitches 60' 10-15 Throws 60-90' 20 Pitches 60'

Mound Phase

If the athlete is a pitcher, they should progress to the next phase of the throwing program. During this phase, Warm-Up will be defined as 2 sets of 25 throws at 120' (correlates to **Step 7** in the previous section). This phase is broken down into 3 Stages.

Stage 1: Fastballs Only **Stage 2:** Fastballs Only **Stage 3:** As Indicated

Pitching from Mound Stage 1			
Step 1 Warm-Up 15 Throws 50%	Step 3 Warm-Up 45 Throws 50%	Step 5 Warm-Up 70 Throws 50%	Step 7 Warm-Up 30 Throws 50% 45 Throws 75%
Step 2 Warm-Up 30 Throws 50%	Step 4 Warm-Up 60 Throws 50%	Step 6 Warm-Up 45 Throws 50% 30 Throws 75%	Step 8 Warm-Up 10 Throws 50% 65 Throws 75%

Pitching from Mound Stage 2	
Step 9 Warm-Up 60 Throws 75% 15 Throws, batting practice	Step 11 Warm-Up 45-50 Throws 75% 45 Throws, batting practice
Step 10 Warm-Up 50-60 Throws 75% 30 Throws, batting practice	

Pitching from Mound Stage 3	
Step 12 Warm-Up 30 Throws 75% 15 Throws 50%, breaking balls 45-60 Throws, batting practice	Step 14 Warm-Up 30 Throws 75% 60-90 Throws, batting practice gradual increase off-speed
Step 13 Warm-Up 30 Throws 75% 30 Throws 75%, breaking balls 30 Throws, batting practice	Step 15 Warm-Up Simulated Game: 15 pitch increments

13U Guidelines

30'	45'	60'	90'	90'-45'
Step 1	Step 3	Step 5	Step 7	Step 8
Warm-Up 25 Throws <i>Rest 15</i> Warm-Up 25 Throws	Warm-Up 25 Throws <i>Rest 15</i> Warm-Up 25 Throws	Warm-Up 25 Throws <i>Rest 15</i> Warm-Up 25 Throws	Warm-Up 25 Throws <i>Rest 15</i> Warm-Up 25 Throws	Warm-Up 20 Throws 90' <i>Rest 10</i> Warm-Up 20 Throws 60' <i>Rest 10</i>
Step 2	Step 4	Step 6		Warm-Up 20 Throws 45' <i>Rest 10</i> Warm-Up 20 Throws 45'
Warm-Up 25 Throws <i>Rest 10</i> Warm-Up 25 Throws <i>Rest 10</i> Warm-Up 25 Throws	Warm-Up 25 Throws <i>Rest 10</i> Warm-Up 25 Throws <i>Rest 10</i> Warm-Up 25 Throws	Warm-Up 25 Throws <i>Rest 10</i> Warm-Up 25 Throws <i>Rest 10</i> Warm-Up 25 Throws		

References

Reinold M, Wilk K, Reed J, Crenshaw K, Andrews J. "Interval Sports Programs: Guidelines for Baseball, Tennis, and Golf." *J Orthop Sports Phys Ther.* 2002 Jun;32(6):293-8.

Roush, James R et al. "Reference Values for the Closed Kinetic Chain Upper Extremity Stability Test (CKCUEST) for Collegiate Baseball Players." *North American journal of sports physical therapy : NAJSPT* vol. 2,3 (2007): 159-63.