

# Interval Throwing Program at Texas Children's

Your medical provider has cleared you to begin a return-to-throw program. Each phase is designed to increase endurance and strength throughout the progression. Every athlete advances at a different rate through the program; therefore, the "soreness rules" are used to prevent overstressing the injured tissue during progression. Early supervision of the program by an athletic trainer or physical therapist is recommended. There is no predicted timeline for completion of the program. Please contact your medical provider if you have any questions or concerns.

## Criteria to begin interval throwing program

- ❑ **Clearance by the athlete's physician**
- ❑ **Upper Extremity Mobility**
  - ❑ Adequate shoulder internal rotation (within 18 degrees of non-throwing side)
  - ❑ Adequate shoulder external rotation mobility (at least >5 degrees of non-throwing side)
  - ❑ Total shoulder range of motion (TROM) (within 5 degrees of non-throwing side)
  - ❑ Shoulder flexion (within 5 degrees of non-throwing side)
  - ❑ Assess thoracic mobility
  - ❑ Assess neurodynamic mobility
- ❑ **Rotator Cuff Strength**
  - ❑ ER/IR strength ratio > 75%
  - ❑ 90% Limb Symmetry Index (LSI)
- ❑ **Open-Chain Power**
  - ❑ 110% LSI on seated shotput test
- ❑ **Closed-Chain Power**
  - ❑ Closed kinetic chain upper extremity stability test > 21 touches
- ❑ **Lower Extremity Mobility/Strength**
  - ❑ Assess Y balance anterior reach and composite scores
  - ❑ Assess hip mobility
- ❑ **Core/Back/Hip Strength**
  - ❑ Assess core/back/hip strength

## Prior to throwing

- ❑ Perform Texas Children's Thrower's 10 to prepare to throw

## After throwing

- ❑ Athletes should perform physical therapy exercises/stretchers after throwing



## Key points for performing the throwing program

- All warm-up throws should use a “gathering step” (shuffle step).
- All throws should be thrown with a small arc as the distance determines the intensity of the throw.
- If instructed by your healthcare provider, ice your shoulder/elbow for 15 minutes at the conclusion of each throwing session.

## How to progress the throwing program

Your healthcare provider will tell you which set of instructions to follow below:

### A. Mild injury (little league elbow/shoulder and UCL sprain)

- Perform each step 1 time
- Throw every other day (e.g., (M, W, F) or (T, Th, Sat))
- Only advance to next step if no pain according to soreness rules.

### B. Moderate/Severe injury (little league elbow/shoulder and UCL sprain)

- Perform each step 2 times
- Throw every other day (e.g., (M, W, F) or (T, Th, Sat))
- Only advance to next step if no pain according to soreness rules

### C. Post-operative (Labral repair, RTC repair, UCL reconstruction, UCL repair)

- Perform each step 3 times
- Throw every other day (e.g., (M, W, F) or (T, Th, Sat))
- Only advance to next step if no pain according to soreness rules

## Soreness rules

- If no soreness, advance as indicated on the program.
- If sore during warm-up but soreness is gone within the first 15 throws, continue the workout.
- If sore during warm-up and soreness continues through the first 15 throws, stop throwing and take 2 days off. Upon return to throwing, drop down one step.
- If sore more than 1 hour after throwing or the next day, take 1 day off and repeat the most recent throwing program workout.

## Pitch count limits and rest recommendation

Age	Daily Max Pitches	0 Days Rest	1 Day Rest	2 Days Rest	3 Days Rest	4 Days Rest	5 Days Rest
7-8	50	1-20	21-35	36-50	n/a	n/a	n/a
9-10	75	1-20	21-35	36-50	51-65	n/a	n/a
11-12	85	1-20	21-35	36-50	51-65	66+	n/a
13-14	95	1-20	21-35	36-50	51-65	66+	n/a
15-16	95	1-30	31-45	46-60	61-75	76+	n/a
17-18	105	1-30	31-45	46-60	61-80	81+	n/a
19-22	120	1-30	31-45	46-60	61-80	81-105	106+

## References

Axe ME, Hurd W, Snyder-Mackler L. Data-based interval throwing programs for baseball players. *Sports Health* 2009; 1(2): 145-153.

Cisco S, Semon MM, Moraski P, Smith J, Thorndike C. Distance-based throwing programs for baseball players from Little League to high school. *Pediatric Physical Therapy* 2019; 31: 297-300.

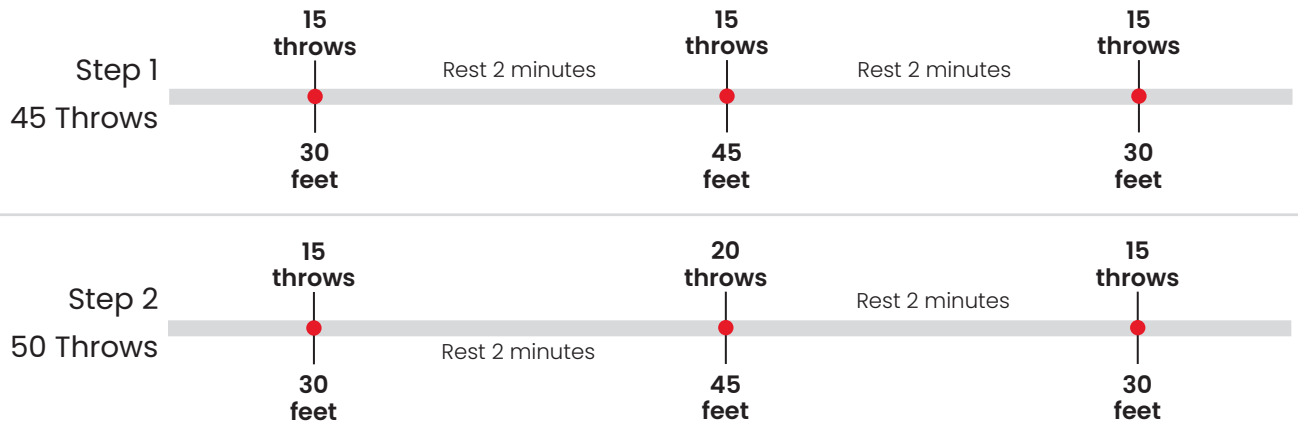
Pitch Smart: Guidelines. MLB.com. Accessed September 5, 2023. <https://www.mlb.com/pitch-smart/pitching-guidelines>.

## Interval Throwing Program: 13-15 Years

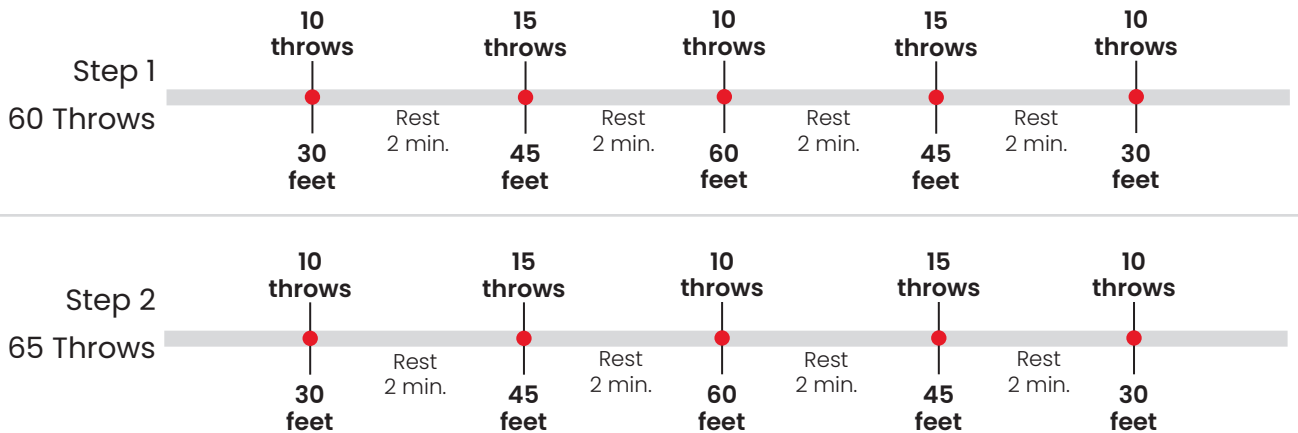
In each throwing session, you will:

1. Warm-up with 5-10 minutes of slow throwing
2. Go through your throwing series with 2 minutes of rest between distance changes
3. Cool-down with 5-10 minutes of slow throwing

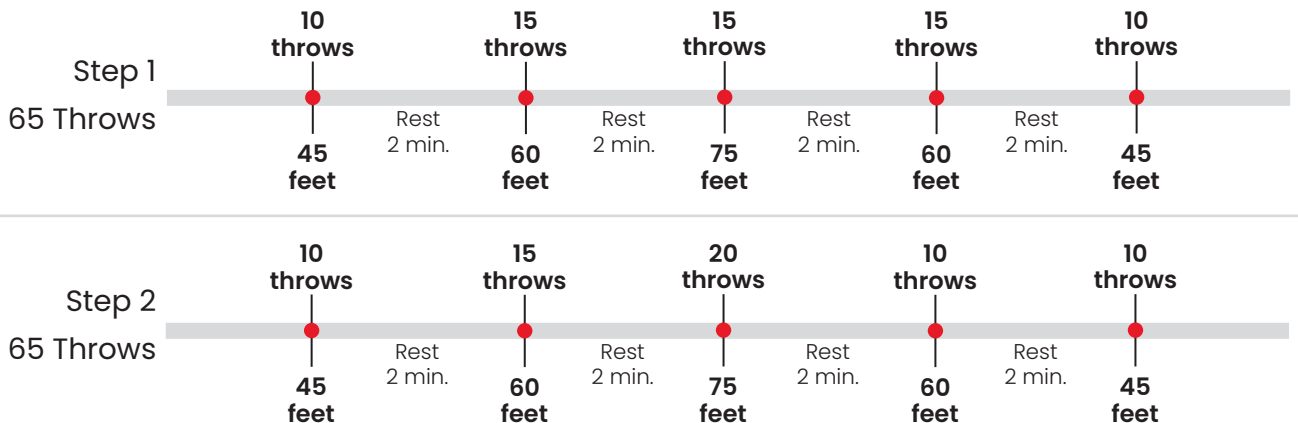
### 45-foot Phase



### 60-foot Phase



### 75-foot Phase

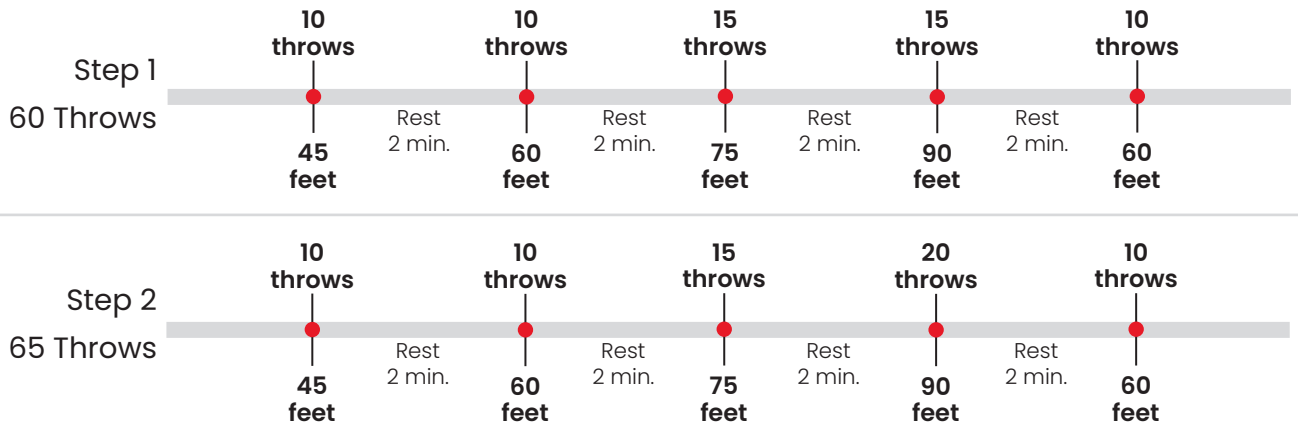


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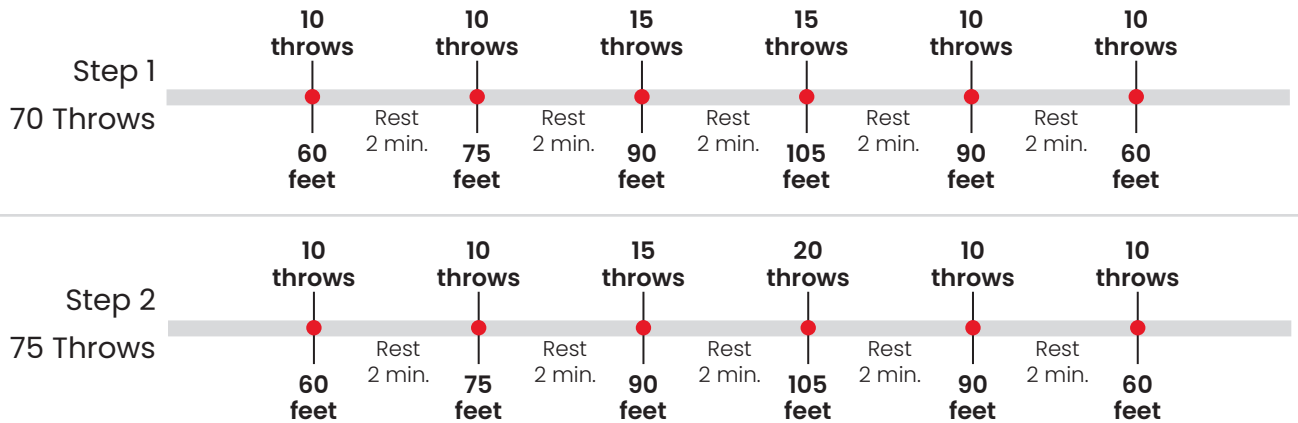
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2. Go through your throwing series with 2 minutes of rest between distance changes
3. Cool-down with 5-10 minutes of slow throwing

### 90-foot Phase



### 105-foot Phase



### 120-foot Phase

