



INTERVAL THROWING PROGRAM

Pitchers: complete the program through the 120 feet phase, then begin the mound program.

Infielders: complete the program through the 150 feet phase.

Outfielders: complete the program through the 180 feet phase.

If you want to throw hard and throw accurately you must throw hard and throw repeatedly ...

However, your shoulder and arm must have time to heal and adapt to the imposed demand. Progression too rapidly in the throwing program **will DELAY** your recovery and return to sport.

The interval-throwing program is just a guide and this guide should be adapted or modified to meet your individual progress and problems. Your athletic trainer, physical therapist or Dr. Hippensteel may help tailor the program to have a slow, normal or accelerated pace based on several factors: the extent of your injury, the type of treatment or repair, the effectiveness of your strengthening program and the time away from throwing. In most cases, the more complicated the problem, the slower you should progress.

Typically, plan to throw every other day or 3 times a week. The number of throwing sessions at a given level will depend on how slowly you are progressing through the program.

Progression Examples	Time (weeks) to complete 45-120 feet level
Elbow Arthroscopy or Nerve Decompression	4 – 8 weeks
Elbow UCL Repair	10 – 14 weeks
Elbow UCL Reconstruction	12 – 20 weeks
Shoulder Debridement	10 – 14 weeks
Shoulder Debridement + Repair	12 – 20 weeks

Pain requires attention. You are adding progressively greater loads on your arm as you add throwing distance. However, if you are having problems at a given level, return to the previous level until your problem is corrected or resolves. Do not hesitate to take an extra day or two off if you are having problems.

- If you have a bad day, take a day off.
- If you are having discomfort or trouble at a level, drop down a level.

While it is not uncommon to have occasional discomfort, you should not have pain. If your problems do not resolve, see your athletic trainer, physical therapist or doctor.

Throwing with a qualified coach or pitching instructor will improve your ability to progress in the throwing program.



Throw to your target, not through your target. Throw on-line, but throw with sub-maximal effort and throw within your comfort level. Hard line throwing has been shown to generate as much upper extremity load as pitching, even at the shortest distances. If you cannot throw on-line at a given distance, do not lob or arc the ball up in an attempt to move to the next level.

Always pay careful attention to your throwing motion / mechanics:

- Use a gathering step or crow hop to initiate your throwing motion on all throws. This will keep your lower body and trunk involved in the throwing motion
- Use a 4-seam grip to allow better view of ball rotation,
- Stay on top of the ball,
- Throw over the top without leaning your trunk (your eyes should stay level with the target)
- Keep your elbow at or above shoulder level
- Avoid trunk extension or shoulder dip (causes high arc on throws)
- Use your legs
- Follow through with your arm and trunk. Emphasize your follow through during the throwing program to promote good mechanics
- Feel like you are throwing the ball with your body, not your arm: Active trunk, quiet arm.

Progression to the next throwing level in the program is based on your ability to perform the elements of the current throwing level. So you must meet the following criteria to move to the next level:

- No pain or stiffness while throwing
- No pain or stiffness after throwing. It's ok to have some exercise related muscle soreness
- Goal based, acceptable, reproducible throwing motion and mechanics
- Consistent throwing accuracy throughout the current level
- Dependably flat, on-line throws
- Good strength throughout the current level with little fatigue.
- And when moving to the next level, you may transition by throwing the first set at the previous level and the second set at the next level for 1-2 days or until you are comfortable throwing two sets at the next level distance.

Continue your upper trunk, scapula and rotator cuff rehabilitation program throughout the interval-throwing program. On throwing days, warm up with aerobic and light stretch cord exercises, then go through the throwing session. Cool down, complete the maintenance trunk and upper extremity exercises that you learned in the rehabilitation process and then ice down. The off day should include light stretch cord exercises for your arm (but just for blood flow and technique – not strengthening) as well as lower body and trunk performance conditioning exercise.

Flat ground pitching is advocated by some after the completion of the long toss program and before the start of the mound program. Since it has been shown that partial effort pitching from the mound causes significantly lower loads on the shoulder and elbow and that there is a mechanical and efficiency advantage to throwing from the mound, we recommend that pitchers avoid flat ground pitching and further recommend that the mound program begin with the



catcher in front of the plate. In the early phases of the mound program, the pitcher should try to throw with a **perceived effort of 60 percent** – and by that we intend for the pitcher to focus on the perceived effort made in the lower body and trunk during the stride toward the plate, not the perceived effort made to propel the ball forward with the arm.

INTERVAL THROWING PROGRAM

All PHASES ~ 2 weeks in duration

To be performed every other day – with pitching coach supervision

Use radar gun to assess effort and speed

*Pitchers <15 years old – begin with 30' throwing and then progress to the 45' phase.

45' PHASE

Week 1:
A) Warm-up Throwing
B) 45' (25 throws)
C) **2 Sets** – Rest 10 minutes between each set

Week 2:
A) Warm-up Throwing
B) 45' (25 throws)
C) **3 Sets** – Rest 5-10 minutes between each set

60' PHASE

Week 3:
A) Warm-up Throwing
B) 60' (25 throws)
C) **2 Sets** – Rest 10 minutes between each set

Week 4:
A) Warm-up Throwing
B) 60' (25 throws)
C) **3 Sets** – Rest 5-10 minutes between each set

75' PHASE

Week 5:
A) Warm-up Throwing
B) 60' (25 throws)
C) **2 Sets** – Rest 10 minutes between each set

Week 6:
A) Warm-up Throwing
B) 60' (25 throws)
C) **3 Sets** – Rest 5-10 minutes between each set



90' PHASE

Week 7: A) Warm-up Throwing
B) 90' (25 throws)
C) **2 Sets** – Rest 10 minutes between each set

Week 8: A) Warm-up Throwing
B) 90' (25 throws)
C) **3 Sets** – Rest 5-10 minutes between each set

105' PHASE

Week 9: A) Warm-up Throwing
B) 90' (25 throws)
C) **2 Sets** – Rest 10 minutes between each set

Week 10: A) Warm-up Throwing
B) 90' (25 throws)
C) **3 Sets** – Rest 5-10 minutes between each set

120' PHASE

Week 11: A) Warm-up Throwing
B) 120' (25 throws)
C) **2 Sets** – Rest 10 minutes between each set

Week 12: A) Warm-up Throwing
B) 120' (25 throws)
C) **3 Sets** – Rest 5-10 minutes between each set

Upon completion of the Week-12 plan, pitchers can begin Mound Throwing Program (below)

150' PHASE

Week 13: A) Warm-up Throwing
B) 150' (25 throws)
C) **2 Sets** – Rest 10 minutes between each set

Week 14: A) Warm-up Throwing
B) 150'' (25 throws)
C) **3 Sets** – Rest 5-10 minutes between each set



180' PHASE

- Week 15:** A) Warm-up Throwing
B) 180' (25 throws)
C) **2 Sets** – Rest 10 minutes between each set
- Week 16:** A) Warm-up Throwing
B) 180' (25 throws)
C) **3 Sets** – Rest 5-10 minutes between each set
- Week 17:** A) Warm-up Throwing
B) 180' (25 throws)
C) **2 Sets** – Rest 10 minutes between each set
D) Rest 10 minutes
F) Warm-up throwing
G) 180' (**50 throws**)
- Week 18** Return to position play

Mound Throwing Program (progress over 3 months)

The Mound Program may be set up many ways and it should be tailored to match the pitcher's individual needs. Early in the program it is reasonable to throw from the mound every other day but eventually throwing from the mound twice a week will be more appropriate. Progressing to the next level must be based on the criteria listed on the first page of the throwing program. Relievers may be able to progress more rapidly through later levels than Starters.

Flat ground pitching is advocated by some after the completion of the long toss program and before the start of the mound program. While it has been shown that when compared to high effort pitching from flat ground, high effort pitching from the mound causes greater stress on the thrower's arm, it has also been shown that partial effort pitching from the mound causes significantly lower loads on the shoulder and elbow and that there is a mechanical advantage and efficiency advantage to throwing from the mound. **We therefore recommend that pitchers avoid flat ground pitching** and believe that 60-foot hat drill throws achieve the downward pull before moving to the mound.

Move the catcher to the front of the plate for the first several days / weeks on the mound in order to decrease the distance thrown and effectively diminish the effort with which the pitch is thrown.

Effort: In the early phases of the mound program, the pitcher should try to throw with a



perceived effort of **50 – 60 percent** – and by that we intend for the pitcher to focus on the perceived effort made in the lower body and trunk during the stride toward the plate, not the perceived effort made to propel the ball forward with the arm.

Pitch Selection: Throw the pitch for which the pitcher has the most consistent command at first (typically fastball), then add change up and finally work on breaking pitches.

Warm up to throw – Don't throw to warm up: Aerobically warm up (run, cycle, get your heart rate up), do neuro-glide exercises (if recommended), do joint mobilization exercises (stretch), do muscle activation exercises (warm up muscles) and then, progress through warm up throws (up to 120 feet initially, extended distances later in the program), and then begin the mound throws.

ALL MOUND THROWING TO BE DONE IN THE PRESENCE OF COACHING FOR CONFIRMATION AND ADJUSTMENT OF PROPER THROWING MECHANICS

MOUND THROWING SESSIONS ARE PERFORMED EVERY 3RD DAY (TWICE PER WEEK), WITH EXTENDED (150' – 180'+ INTERVAL THROWING PROGRAM) PERFORMED TWO SEPARATE DAYS PER WEEK. MANDATORY MINIMUM 1 DAY OF COMPLETE REST PER WEEK. (*If additional throwing is performed during week, it should be one of the earlier short distance plans from the interval throwing program above, i.e. 45' or 60').

PHASE 1:	Fastball Only
Week 1:	Interval Throwing 15 Throws off mound 50%
Week 2:	Interval Throwing 30 Throws off mound 50%
Week 3:	Interval Throwing 45 Throws off mound 50%
Week 4:	Interval Throwing 60 Throws off mound 50%
Week 5:	Interval Throwing 30 Throws off mound 75%
Week 6:	30 Throws off mound 75% 45 Throws off mound 50%



Week 7: 45 Throws off mound 75%
15 Throws off mound 50%

Week 8: 60 Throws off mound 75%

PHASE 2: Fastball Only

Week 9: 45 Throws off mound 75%
15 Throws in Batting Practice

Week 10: 45 Throws off mound 75%
30 Throws in Batting Practice

Week 11: 45 Throws off mound 75%
45 Throws in Batting Practice

PHASE 3:

Week 12: 30 Throws off mound 75% warm-up
15 Throws off mound 50% breaking balls
45-60 Throws in Batting Practice (fastball only)

Week 13: 30 Throws off mound 75%
30 Breaking balls 75%
30 Throws in Batting Practice

Week 14: 30 Throws off mound 75%
60-90 Throws in Batting Practice / 25% breaking balls

Week 15: Simulated game: progressing by 15 throws per workout