PROFESSIONAL ORTHOPAEDICS
SPORTS MEDICINE & ARTHROSCOPY

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INTERVAL THROWING PROGRAM

The purpose of an interval throwing program is to slowly help you regain strength, motion and confidence in your throwing arm after injury or surgery. In the interval program you will advance through a series of increasing throwing distances. This program will be initiated by both your therapist and Dr. Mc Millan, once you have progressed sufficiently through your rehab. At a minimum you must have pain-free range of motion, sufficient muscle power, and sufficient muscular endurance prior to undertaking the throwing program.

It is important to realize that each throwing athlete is different, so that there is no set timetable for completion and progression of the program. However, by their very nature athletes are competitive and desire to return to competition as quickly as possible. Often this desire must be curtailed and the athlete's energy and enthusiasm must be channeled into safely completing the program in order to avoid re-injury of the throwing arm. *It is highly recommended that this program be strictly adhered to in order to avoid re-injury of the throwing arm*.

During the recovery process it is normal to feel a dull ache and soreness. However, if the athlete experiences a sharp pain or pain that lasts longer than one half hour after throwing stop all throwing activity until the pain subsides. If the pain continues it will be important to alert Dr. Mc Millan.

Throwing should be done every other day, if symptoms permit. In addition, this program should be supplemented with a weight-training program that focuses on high rep, low weight exercises. Strengthening should include a balanced approach to anterior and posterior musculature to help avoid injury. Weight training exercises should be done on the same day as the athlete throws, after throwing. The day in between throwing should be reserved for flexibility exercises and recovery.

Warm up should precede any activity. Jogging or riding a stationary bicycle will increase blood flow to joints and increase flexibility. The athlete is warmed up when he or she experiences a light sweat. Similarly, all muscle groups should be stretched prior to throwing. This should be done in an orderly fashion starting with the legs and progressing through the trunk, back, neck

and arms. It can be helpful to continue capsular stretches and range of motion exercises done in the earlier part of rehab.

It is crucial that proper mechanics be emphasized during the program. Throwing flat-footed places too much stress on the throwing arm and can lead to re-injury. A good way to help ensure proper mechanics is with the crow-hop throwing motion. The crow hop components include a hop, followed by a skip, followed by a throw. A good video of this can be found at: http://www.youtube.com/watch?v=98nYdcKaSsM

Using the crow-hop method the athlete should begin warm up with throws at a comfortable distance (usually about 35-40 ft) and progress to the distance indicated for the phase they are currently on (see below). The athlete will throw at each step 2-3 times without any pain or symptoms prior to advancing to the next step. The object of the program is for the athlete to be able to throw at each distance without pain a total of 75 times.

Phase I: crow-hop, flat ground throwing

45-foot phase:

Step 1:
A) Warm up throwing
B) 45' (25 throws)
C) rest 5-10 min
D) warm up throwing
E) 45' (25 throws)

Step 2:
A) Warm up throwing
B) 45' (25 throws)
C) rest 5-10 min
D) warm up throwing
E) 45' (25 throws)
F) rest 5-10 min
G) warm up throwing
H) 45' (25 throws)

60-foot phase:

Step 3:
A) Warm up throwing
B) 60' (25 throws)
C) rest 5-10 min
D) warm up throwing
E) 60' (25 throws)

Step 4:
A) Warm up throwing
B) 60' (25 throws)
C) rest 5-10 min
D) warm up throwing
E) 60' (25 throws)
F) rest 5-10 min
G) warm up throwing
H) 60' (25 throws)

The same drill is repeated for 90 feet (steps 5 and 6), 120 feet (steps 7 and 8), 150 feet (steps 9 and 10) and 180 feet (steps 11 and 12). After the athlete can comfortably complete 75 throws at 180 feet flat ground throwing using pitching mechanics can be initiated.

Flat ground throwing:

A) warm up throwing
B) throw 60' (10-15 throws)
C) throw 90' (10 throws)
D) throw 120' (10 throws)
E) throw 60' (flat ground) using pitching mechanics (20-30 throws)
F) throw 60-90' (10-15 throws)
G) throw 60' (flat ground) using pitching mechanics (20 throws)

Phase II: Throwing off the mound and simulated games

Once the athlete can complete Phase I of the program without pain he or she is ready for throwing off the mound or a return to their respective position. The athlete should have full strength and confidence in the arm at this point. The return to unrestricted throwing should follow the same gradual and orderly progression as the first part of the program. The pitcher should start throwing only fastballs and then gradually progress to throwing breaking balls. If the thrower experiences pain it is important to back off the program and advance only as symptoms allow.

Stage I: fastballs only

Step 1: A) interval throwing 120' phase as warm-up
B) 15 throws off mound at 50% velocity

Step 2: A) interval throwing 120' phase as warm-up
B) 30 throws off mound at 50% velocity

Step 3: A) interval throwing 120' phase as warm-up
B) 45 throws off mound at 50% velocity

Step 4: A) interval throwing 120' phase as warm-up
B) 60 throws off mound at 50% velocity

Step 5: A) interval throwing 120' phase as warm-up
B) 70 throws off mound at 50% velocity

Step 6: A) 45 throws off mound at 50% velocity
B) 30 throws off mound at 75% velocity

Step 7: A) 30 throws off mound at 50% velocity
B) 45 throws off mound at 75% velocity

Step 8: A) 65 throws off mound at 75% velocity
B) 10 throws off mound at 50% velocity

Stage II: fastballs only

Step 9: A) 60 throws off mound at 75% velocity
B) 15 throws in batting practice

Step 10: A) 50-60 throws off mound at 75% velocity
B) 30 throws in batting practice

Step 11: A) 45-50 throws off mound at 75% velocity
B) 45 throws in batting practice

Stage III: initiate breaking ball pitches

Step 12: A) 30 throws off mound at 75% velocity warm up
B) 15 throws off mound at 50% velocity, breaking balls
C) 45-60 throws in batting practice, fastballs only

Step 13: A) 30 throws off mound at 75% velocity warm up
B) 30 throws off mound at 75% velocity, breaking balls
C) 30 throws in batting practice

Step 14: A) 30 throws off mound at 75% velocity warm up
B) 60-90 throws in batting practice, gradually increase breaking balls

Step 15: Simulated game, progress by 15 throws per workout (keep pitch count)

Interval Throwing Program Training Log:

Date	Phase/Step	Pain level
	45’ / step 1	
	45’ / step 2	
	60’ / step 3	
	60’ / step 4	
	90’ / step 5	
	90’/ step 6	
	120’ / step 7	
	120’ / step 8	
	150’ / step 9	
	150’ / step 10	
	180’ / step 11	
	180’ / step 12	
	180’ / step 13 (this is the same as step 11)	
	Flat ground throwing	
	Stage I / step 1	
	Stage I / step 2	
	Stage I / step 3	
	Stage I / step 4	
	Stage I / step 5	
	Stage I / step 6	
	Stage I / step 7	
	Stage I / step 8	
	Stage II/ step 9	
	Stage II/ step 10	
	Stage II/ step 11	
	Stage III / step 12	
	Stage III / step 13	
	Stage III / step 14	
	Simulated game 1	
	Simulated game 2	
	Simulated game 3	