



Interval Throwing Program for Baseball Players - Phase I

The Interval Throwing Program (ITP) is designed to gradually return motion, strength and confidence in the throwing arm after injury or surgery by slowly progressing through graduated throwing distances. The ITP is initiated upon clearance by the athlete's physician to resume throwing, and performed under the supervision of the rehabilitation team, (physician, physical therapist and athletic trainer).

The program is set up to minimize the chance of re-injury and emphasize pre-throwing warm-up and stretching. In development of the interval throwing program, the following factors are considered most important.

1. The act of throwing the baseball involves the transfer of energy from the feet through the legs, pelvis, trunk, and out the shoulder through the elbow and hand. Therefore, any return to throwing after injury must include attention to the entire body.
2. The chance for re-injury is lessened by a graduated progression of interval throwing.
3. Proper warm-up is essential.
4. Most injuries occur as the result of fatigue.
5. Proper throwing mechanics lessen the incidence of re-injury.
6. Baseline requirements for throwing include: Pain-free range of motion
 - Adequate muscle power
 - Adequate muscle resistance to fatigue

Because there is individual variability in all throwing athletes, there is no set timetable for completion of the program. Most athletes, by nature, are highly competitive individuals and wish to return to competition at the earliest possible moment. While this is a necessary quality of all athletes, the proper channeling of the athlete's energies into a rigidly controlled throwing program is essential to lessen the chance of re-injury during the rehabilitation process. *The athlete may have the tendency to want to increase the intensity of the throwing program. This will increase the incidence of re-injury and may greatly retard the rehabilitation process. It is recommended to follow the program rigidly as this **will be the safest** route to return to competition.*

During the recovery process the athlete will probably experience soreness and a dull, diffuse aching sensation in the muscles and tendons. If the athlete experiences sharp pain, particularly in the joint, stop all throwing activity until this pain ceases. If continued pain, contact your physician.

Weight Training: The athlete should supplement the ITP with a high repetition, low weight exercise program. Strengthening should address a good balance between anterior and posterior musculature so that the shoulder will not be predisposed to injury. Special emphasis must be given to posterior rotator cuff musculature for any strengthening program. Weight training will not increase throwing velocity but will increase the resistance of the arm to fatigue and injury. Weight training should be done the same day as you throw: however, it should be after your throwing is completed, using the day in between for flexibility exercises and a recovery period. A weight training pattern or routine should be stressed at this point as a "maintenance program." This pattern can and should accompany the athlete into and throughout the season as a deterrent to further injury. It must be stressed that weight training is of no benefit unless accompanied by a sound flexibility program.

Individual Variability: The ITP is designed so that each level is achieved without pain or complications before the next level is initiated. This sets up a progression in which a goal is achieved prior to advancement rather than advancing to a specific timeframe. Because of this design, the ITP may be used for different levels of skills and



abilities from those in high school to professional levels. Progression will vary from person to person throughout the ITP. Example: One athlete may wish to use alternate days throwing with or without using weights In between; another athlete may have to throw every third or fourth day due to pain or swelling. "Listen to your body - it will tell you when to slow down." Again, completion of the steps of the ITP will vary from person to person. There is no set timetable in terms of days to completion.

Warm-up: We recommend 1 set of 10 repetitions of throwers ten exercises be performed prior to ITP. Jogging may also assist in warm-up. Jogging increases blood flow to the muscles and joints thus increasing their flexibility and decreasing the chance of re injury. Since the amount of warm-up will vary from person to person, the athlete should jog until developing a light sweat, then progress to the stretching phase.

Stretching: Since throwing involves all muscles in the body, all muscle groups should be stretched prior to throwing. This should be done in a systematic fashion beginning with the legs and including the trunk, back, neck and arms Continue with capsular stretches and L-bar range of motion exercises.

Throwing Mechanics: A critical aspect of the ITP is maintenance of proper throwing mechanics throughout the advancement. The use of the Crow-Hop method simulates the throwing act, allowing emphasis of the proper body mechanics. This throwing method should be adopted from the set of the ITP. Throwing flat footed encourages improper body mechanics, placing increases stress on the throwing arm and, therefore, predisposing the arm to re-injury. The pitching coach and sports biomechanicianist (if available) may be valuable allies to the rehabilitation team with their knowledge of throwing mechanics.

Components of the Crow-Hop method are first a hop, then a skip, followed by the throw. The velocity of the throw is determined by the distance, whereas the ball should have only enough momentum to travel each designed distance. Again, emphasis should be placed upon proper throwing mechanics when the athlete beings' phase two: "Throwing Off the Mound" or from the athlete's respective position, to decrease the chance of re-injury.

Throwing: Using the Crow-Hop method, the athlete should begin warm-up throws at a comfortable distance (approximately 30-45 ft.) and then progress to the distance indicated for that phase (refer to Table 1). **** The program consists of throwing at each step 2 to 3 times without pain or symptoms before progressing to the next step.* The object of each phase is for the athlete to be able to throw the ball without pain the specified number of feet (45 ft., 60 ft., 90 ft., 120 ft., 150 ft, 180ft.), 75 times at each distance. After the athlete can throw at the prescribed distance without pain, they will be ready for throwing from flat ground 60ft, 6 In. in the normal pitching mechanics or return to their respective position (step 14). At this point, full strength and confidence should be restored in the athlete's arm. It is important to stress the Crow-Hop method and proper mechanics with each throw. Just as the advancement to this point has been gradual and progressive, the return to unrestricted throwing must follow the same principles. A pitcher should first throw only fast balls at 50%, progressing to 75% and 100%. At this time, he may start more stressful pitches such as breaking balls. The position player should simulate a game situation, again progressing at 50-75 -100%. Once again, if an athlete has increased pain, particularly at the joint, the throwing program should be backed off and re-advanced as tolerated. under the direction of the rehabilitation team.

Batting: Depending on the type of injury that the athlete has, the time of return to batting should be determined by the physician. It should be noted that stress placed upon the arm and should in the batting motion are very different from the throwing motion. Return to unrestricted use of the bat should also follow the same



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progression guidelines as seen in the training program. Begin with dry swings progressing to hitting off the tee, then soft toss and finally live pitching.

Summary: In using the Interval Throwing Program (ITP) in conjunction with a structured rehabilitation program, the athlete should be able to return to full competition status, minimizing any chance of re-injury. The program and its progression should be modified to meet the specific needs of each individual athlete. A comprehensive program consisting of a maintenance strength and flexibility program, appropriate warm-up and cool down procedures, proper pitching mechanics, and progressive throwing and batting will assist the baseball player in returning safely to competition.

Week 16 -24

Exercises: Continue Thrower's Ten Program and plyos

Week 16: Initiate dry throwing (30 reps every other day for 2 weeks)

Week 18: Initiate towels throws (30 reps every other day for 2 weeks)

Week 20: Initiate elbow toss (30 throws every other day for 2 weeks)

Week 22: Initiate rainbow throws (30 throws at 30 feet every other day for 2 weeks)

Week 24: Initiate phase 1 (45 feet) of interval throwing program.

It will take at least 10 weeks to complete Phase 1 throwing.

Each step JVIUST be performed a minimum of 2 sessions, pain free and on alternating days, before progressing to the next step



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Interval Throwing Program- Phase 1- Long Toss

	Distance	Throws								
45ft Phase			<u>Step 1</u>	<u>Step 2</u>	<u>Step 3</u>					
Week 1	30ft		20	20	20					
	45ft		0	10	10					
Week 2-3			<u>Step 4</u>	<u>Step 5</u>	<u>Step 6</u>	<u>Step 7</u>	<u>Step 8</u>	<u>Step 9</u>		
	30ft		20	20	20	20	20	20		
	45ft		20	25	30	35	40	45		
60ft Phase			<u>Step 10</u>	<u>Step 11</u>	<u>Step 12</u>	<u>Step 13</u>	<u>Step 14</u>	<u>Step 15</u>		
Week 4-5	30ft		10	10	10	10	10	10		
	45ft		10	10	10	10	10	10		
	60ft		20	25	30	35	40	45		
	30ft		10	10	10	10	10	10		
75ft Phase			<u>Step 16</u>	<u>Step 17</u>	<u>Step 18</u>					
Week 6	45ft		10	10	10					
	60ft		20	15	15					
	75ft		15	20	25					
	45ft		10	10	10					
Deload Week			<u>Step 19</u>	<u>Step 20</u>	<u>Step 21</u>					
Week 7	45ft		10	10	10					
	60ft		10	10	10					

** Program is to be done three times per week with a day off in between

** Each step represents one day of throwing

** All throws 90 feet and greater are to be done with a cow hop and an arc, use distance to dictate intensity.



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		<u>Step</u>	<u>Step</u>	<u>Step</u>	<u>Step</u>	<u>Step</u>	<u>Step</u>
90ft Phase		<u>22</u>	<u>23</u>	<u>24</u>	<u>25</u>	<u>26</u>	<u>27</u>
Week 8-9	45ft	10	10	10	10	10	10
	60ft	10	10	10	10	10	10
	75ft	20	20	20	20	20	20
	90ft	10	15	20	25	30	30
	60ft	10	10	10	10	10	10
		<u>Step</u>	<u>Step</u>	<u>Step</u>			
105ft Phase		<u>28</u>	<u>29</u>	<u>30</u>			
Week 10	45ft	5	5	5			
	60ft	10	10	10			
	75ft	10	10	10			
	90ft	15	15	10			
	105ft	10	15	25			
	60ft	10	10	10			
		<u>Step</u>	<u>Step</u>	<u>Step</u>	<u>Step</u>	<u>Step</u>	<u>Step</u>
120ft Phase		<u>31</u>	<u>32</u>	<u>33</u>	<u>34</u>	<u>35</u>	<u>36</u>
Week 11-12	45ft	5	5	5	5	5	5
	60ft	10	10	10	10	10	10
	75ft	10	10	10	10	10	10
	90ft	10	10	10	10	10	10
	105ft	10	10	10	15	15	15
	120ft	10	15	20	20	25	30
	60ft	10	10	10	10	10	10
		<u>Step</u>	<u>Step</u>	<u>Step</u>	<u>Step</u>	<u>Step</u>	<u>Step</u>
Flat Ground Phase		<u>37</u>	<u>38</u>	<u>39</u>	<u>40</u>	<u>41</u>	<u>42</u>
Week 13-14	45ft	5	5	5	5	5	5
	60ft	10	10	10	10	10	10
	75ft	10	10	10	10	10	10
	90ft	10	10	10	10	10	10
	105ft	10	10	10	10	10	10
	120ft	20	20	20	20	20	20
	60ft	10	10	15	15	20	20
		<u>Step</u>	<u>Step</u>	<u>Step</u>			
Deload Week		<u>43</u>	<u>44</u>	<u>45</u>			
Week 15	45ft	10	10	10			
	60ft	25-30	25-30	25-30			



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Interval Throwing Program- Phase 11- Mound Progression

**Warmup throwing to be performed before bullpens. 10 throws at 60ft, 90ft, 120ft, 5 pullovers on the way back, 10 throws 60ft Flat Ground

** Long toss: Light = to 120' x15-20 w/ arc, no pulldowns, Pulldowns= out to 120-180' x 10 w/arc, 5 pulldowns reducing arc, 5 pulldowns on way in

** Light catch = easy catch out to 60-90' x 25-30 throws based on how you feel

	<u>Mon</u>	<u>Tue</u>	<u>Wed</u>	<u>Thur</u>	<u>Fri</u>	<u>Sat</u>	<u>Sun</u>
Week 1							
Throws	15	Off	Long Toss	Off	Long Toss	Off	Off
Intensity	50%		Light		Pulldowns		
Pitch Type	FB Only						
Week 2							
Throws	20	Off	Long Toss	Off	Long Toss	Off	Off
Intensity	50%		Light		Pulldowns		
Pitch Type	FB Only						
Week 3							
Throws	20	Off	Long Toss	Off	Long Toss	Off	Off
Intensity	50-75%		Light		Pulldowns		
Pitch Type	FB Only						
Week 4							
Throws	25	Off	Long Toss	Off	Long Toss	Off	Light Catch
Intensity	75%		Light		Pulldowns		
Pitch Type	FB Only						
Week 5							
Throws	Long Toss	30	Off	Long Toss	30	Off	Off
Intensity	Light	75%		Light	75%		
Pitch Type		FB/CH					
Week 6							
Throws	Long Toss	35	Off	Long Toss	35	Off	Off
Intensity	Light	75%		Light	75%		
Pitch Type		FB/CH			FB/CH		





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Deload Week

Warm up and back upto 60ft for ~30 throws 3x per week for deload week

Week 7

Week 8

	<u>Mon</u>	<u>Tue</u>	<u>Wed</u>	<u>Thur</u>	<u>Fri</u>	<u>Sat</u>	<u>Sun</u>
Throws	Long Toss	40	Off	Long Toss	40	Off	Off
Intensity	Light	75%		Light	75%		
Pitch Type		FB/CH/Easy Breathing			FB/CH/Easy Breathing		

Week 9

	<u>Mon</u>	<u>Tue</u>	<u>Wed</u>	<u>Thur</u>	<u>Fri</u>	<u>Sat</u>	<u>Sun</u>
Throws	Long Toss	40	Light Catch	Long Toss	40	Light Catch	Off
Intensity	Light	90%		Light	90%		
Pitch Type		FB/CH/Easy Breathing			FB/CH/Easy Breathing		

Week 10

	<u>Mon</u>	<u>Tue</u>	<u>Wed</u>	<u>Thur</u>	<u>Fri</u>	<u>Sat</u>	<u>Sun</u>
Throws	Long Toss	40	Catch	Light Catch	Long Toss	Light Catch	Off
Intensity	Light	90%			Light		
Pitch Type		All					

Week 11

	<u>Mon</u>	<u>Tue</u>	<u>Wed</u>	<u>Thur</u>	<u>Fri</u>	<u>Sat</u>	<u>Sun</u>
Throws	Long Toss	40	Light Catch	Light Catch	Long Toss	Light Catch	Off
Intensity	Light	100%			Light		
Pitch Type		All					

Week 12

	<u>Mon</u>	<u>Tue</u>	<u>Wed</u>	<u>Thur</u>	<u>Fri</u>	<u>Sat</u>	<u>Sun</u>
Throws	Long Toss	40	Light Catch	Long Toss	40	Light Catch	Off
Intensity	Light	100%		Light	100%		
Pitch Type		All			All		

Week 13

	<u>Mon</u>	<u>Tue</u>	<u>Wed</u>	<u>Thur</u>	<u>Fri</u>	<u>Sat</u>	<u>Sun</u>
Throws	Long Toss	40	Light Catch	Long Toss	Long Toss	Light Catch	Light Catch
Intensity	Light	100%		Light	Light		
Pitch Type		All					

DELOAD WEEK



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Week 14 Warm up and back up to 60ft for ~30 throws 3x per week for deload week.

	<u>Mon</u>	<u>Tue</u>	<u>Wed</u>	<u>Thur</u>	<u>Fri</u>	<u>Sat</u>	<u>Sun</u>
Throws	20 Pen 20 BP	Light Catch	Light Catch	Long Toss	25	Light Catch	Long Toss
Intensity	Live BP			Light	75-90%		Light
Pitch Type	All				All		

	<u>Mon</u>	<u>Tue</u>	<u>Wed</u>	<u>Thur</u>	<u>Fri</u>	<u>Sat</u>	<u>Sun</u>
Throws	20 Pen, 2x15 BP	Light Catch	Light Catch	Long Toss	Long Toss or Light Pen	Light Catch	Light Catch
Intensity	Live BP			Light			
Pitch Type	All						



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