

## Testing Protocol for Initiation of Throwing Program after Medial Elbow Surgery

Kerlan-Jobe Orthopaedic Clinic (KJOC) score: \_\_\_\_\_

Test	Operative Arm	Nonoperative Arm	Score	Passing Score	Pass	Fail
Passive shoulder external rotation in 90° abduction			-	Operative arm $\geq$ nonoperative	<input type="checkbox"/>	<input type="checkbox"/>
Passive shoulder internal rotation in 90° abduction			-	Operative arm within 15° nonoperative	<input type="checkbox"/>	<input type="checkbox"/>
Total arc of motion			-	Operative arm within 5° nonoperative	<input type="checkbox"/>	<input type="checkbox"/>
Passive elbow extension			-	At baseline	<input type="checkbox"/>	<input type="checkbox"/>
Passive elbow flexion			-	At baseline	<input type="checkbox"/>	<input type="checkbox"/>
Shoulder IR peak torque at 60°/sec*			Ratio:	Ratio > 1.15	<input type="checkbox"/>	<input type="checkbox"/>
Shoulder ER peak torque at 60°/sec*			Ratio:	Ratio > .95	<input type="checkbox"/>	<input type="checkbox"/>
ER to IR strength ratio		-	Ratio:	Ratio > .7	<input type="checkbox"/>	<input type="checkbox"/>
Elbow flexion at 60°/sec*			Ratio:	Ratio > 1.0	<input type="checkbox"/>	<input type="checkbox"/>
Elbow extension at 60°/sec*			Ratio:	Ratio > 1.0	<input type="checkbox"/>	<input type="checkbox"/>
Forearm pronation at 60°/sec*			Ratio:	Ratio > 1.0	<input type="checkbox"/>	<input type="checkbox"/>
Grip strength			Ratio:	Ratio > 1.0	<input type="checkbox"/>	<input type="checkbox"/>
Prone ball drop test			Ratio:	Ratio > 1.10	<input type="checkbox"/>	<input type="checkbox"/>
One-arm throws against the wall using 2lb plyoball for 30 seconds			Ratio:	Ratio > .9	<input type="checkbox"/>	<input type="checkbox"/>
Throwing into rebounder with 1lb plyoball for 30 seconds			Ratio:	Ratio > .9	<input type="checkbox"/>	<input type="checkbox"/>
ERET at 90° abduction			Ratio:	Ratio > .9	<input type="checkbox"/>	<input type="checkbox"/>
CKCUES test			Touches:	21+ touches	<input type="checkbox"/>	<input type="checkbox"/>
Unilateral Seated Shot Put (USS) test			Ratio:	Ratio > .9	<input type="checkbox"/>	<input type="checkbox"/>
Single-leg step-down for 30 seconds				>95% limb symmetry	<input type="checkbox"/>	<input type="checkbox"/>
Prone plank test for time			Time (s):	>180 seconds	<input type="checkbox"/>	<input type="checkbox"/>

\*Isokinetic testing can be substituted for isometric testing with handheld dynamometer, should be done supine in 45° shoulder abduction

ERET – External Rotation Endurance Test

CKCUES - Closed Kinetic Chain Upper Extremity Stability

### Testing guidelines and criteria:

- Clearance testing should take place approximately 12 weeks following surgery for UCL repair with internal brace or 16 weeks following surgery for UCL hybrid reconstruction
- KJOC score above 85 is consistent with readiness to begin throwing
- Clearance to initiate throwing program requires passage of *all* tasks
- If athlete fails 1 singular task, they continue physical therapy for 2 weeks with an emphasis on the weakness/deficit identified by the failed task and then may initiate throwing program without retesting
- If the athlete fails 2+ tasks, they continue therapy for 4 weeks and then re-test before initiating throwing program

### Criteria based on:

1. Alberta FG, ElAttrache NS, Bissell S, et al. The development and validation of a functional assessment tool for the upper extremity in the overhead athlete. *Am J Sports Med.* 2010;38(5):903-911.
2. Wilk KE, Arrigo CA, Bagwell MS, Rothermich MA, Dugas JR. Repair of the Ulnar Collateral Ligament of the Elbow: Rehabilitation Following Internal Brace Surgery. *J Orthop Sports Phys Ther.* 2019;49(4):253-261.
3. Wilson KW, Popchak A, Li RT, Kane G, Lin A. Return to sport testing at 6 months after arthroscopic shoulder stabilization reveals residual strength and functional deficits. *Journal of Shoulder and Elbow Surgery.* 2020;29(7):S107-S114.