

**APPENDIX:
The Houston Astros Stretching Program**

Our Flexibility program consists of 5 positions. Four of the 5 have 2 variations of each position. We use contract-relax at every position with all of the motions. Each position has 3 repetitions and about a 3 sec hold.

Position 1A. Supine, stretch the arm (with elbow extended) into shoulder extension



Position 1A stretches the biceps along both heads but primarily the long head, including its origin at the superior labrum.

Position 1B. Supine, stretch the arm (with elbow flexed) into shoulder extension



Position 1B should stretch the anterior capsule.

Position 2. Supine, shoulder abducted to 90 deg and elbow flexed to 90 deg (90/90 position). Distal arm rests on athletic trainer's thigh for support parallel to floor. The scapula is not manually constrained to avoid stretch of the anterior capsule and to include peri-scapular musculature. Stretch into external rotation. Most throwers will reach at least 120 deg of external rotation. We do not exceed 180 deg of rotation.



Position 2 should stretch the internal rotators.

Position 3A. Supine, shoulder abducted to 90 deg and elbow flexed to 90 deg (90/90 position). Elbow rests on athletic trainer's thigh parallel to floor. The scapula is not constrained to include the peri-scapular musculature. Stretch into internal rotation. In this position we allow the gleno-humeral joint to rotate forward. Try to prevent shoulder shrugging. Player actively returns arm to starting position against gentle resistance.



Position 3A stretches the scapulo-thoracic musculature into shoulder internal rotation.

Position 3B. Supine, shoulder abducted to 90 deg and elbow flexed to 90 deg (90/90 position). Elbow rests on athletic trainer's thigh parallel to floor. Scapula held against table to focus stretch on posterior capsule and posterior rotator cuff. Stretch into internal rotation while blocking scapula rotation with your hand against the anterior gleno-humeral joint. In this position we do not allow the gleno-humeral joint to rotate forward. Try to prevent shoulder shrugging.



Position 3B stretches the posterior gleno-humeral soft tissues into shoulder internal rotation.

Position 4A. Supine, shoulder abducted to 90 deg and elbow extended. Stretch into horizontal adduction. Player actively returns to starting position against light resistance. Try to prevent shoulder shrugging.



Position 4A stretches the posterior scapulo-thoracic musculature.

Position 4B. Supine, shoulder abducted to 90 deg and elbow extended. Stretch into horizontal adduction while blocking the lateral border of the scapula with the heel of your hand. The patient pulls his arm across his chest with his opposite hand. Try to prevent shoulder shrugging.



Position 4B stretches the posterior gleno-humeral musculature and capsule.

Position 5A. Prone, shoulder internally rotated so that the back of the hand is resting on the lumbar region. GENTLY push the elbow toward the floor while securing the hand in the small of the back. Allow scapula winging! Player pushes elbow back to starting position against gentle resistance.



Position 5A stretches the posterior scapulo-thoracic musculature into shoulder internal rotation.

Position 5B. Prone, shoulder internally rotated so that the back of the hand is resting on the lumbar area of the back, while securing the body of the scapula to prevent winging **GENTLY** push the elbow toward the floor while securing the hand in the small of the back. Do not allow scapula winging! Player actively returns to starting position against light resistance.



Position 5B stretches the posterior gleno-humeral soft tissues into shoulder internal rotation.

With an experienced trainer and player, this program takes a minimum amount of time (2 ½ minutes) and addresses all the areas that we feel are important with particular emphasis on internal rotation.

External rotation ROM is achieved with the action of throwing and typically needs less work. Today's athlete has often been stretching since Little League with emphasis on external rotation and little work in internal rotation. This has reduced the need to work into external rotation.

This program is done daily (except for the day after a game for a starter) and is typically done shortly before the pitcher goes out to throw. Note that the movements are fairly rapid. This is intentional to more closely mimic the forces the muscles see during throwing.

Note that this is a stretching program for uninjured shoulders, and **SHOULD NOT** be used for injured shoulders.