Rehabilitation prescription for:

Patient label

Pediatric Orthopedic and Scoliosis Center
Rehabilitation Medicine Center

Diagnosis: R / L Throwers shoulder, Scapular dyskinesis, GIRD (Glenohumeral IR deficit)

Rx:

- Posterior capsular stretches
  - "Sleeper stretches"
    - 3 stretches held for 20 seconds in each position 2-3 times per day
    - Perform at 70, 90 and 110 degrees of shoulder flexion
  - Cross body stretch
- Scapula
  - Scapular and trapezius strengthening
  - Scapular positioning and stability exercises
- Kinetic chain
  - Core muscle strengthening
  - Stretch and strengthen hamstrings and hip flexors
- Rotator cuff
  - Selective posterior shoulder strengthening exercises
  - Progress to RC strengthening as last stage
  - Endurance training of RC muscles
- Mechanics
  - Improve mechanics of throwing

Additional Instructions:

_____ _____

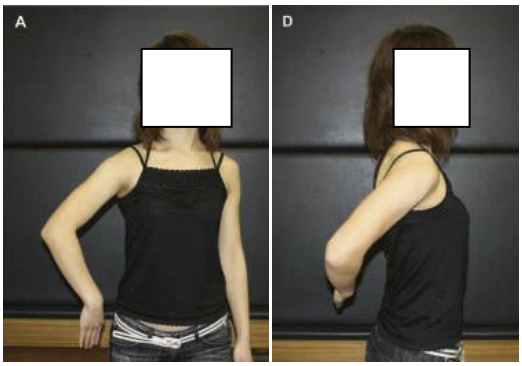
Robert G. Tysklind, MD Date

SLEEPER STRETCH
Lie on your right side with your right arm in front of you so it's perpendicular to your body. Bend your right elbow to 90 degrees so that your forearm is perpendicular to the floor and your fist is pointing up. Now, use your left hand to gently push your right forearm and hand toward the ground alongside your body until you feel a stretch in the back of your shoulder. If you start to feel a pinch, ease up on the stretch.

Cross-body stretch

For the cross-body stretch, the individual places the involved shoulder against a wall to prevent the scapula from rotating. The other arm is used to pull the involved arm across the body, placing a stretch on the posterior aspect of the shoulder.

Other stretches



Phases of physical therapy

Goal:

Return to full throwing velocity over course of 3 months

- **Phase 1 Acute phase**
    - Activity modification
    - Decrease pain
    - Decrease inflammation
    - Normalize range of motion
    - Techniques:
        - PROM, AAROM
        - NSAIDS
        - Massage therapy
        - Manual edema control
        - Cryotherapy
        - Neuromuscular facilitation

- **Phase 2**
    - Pain and inflammation have decreased
    - Strengthening and neuromuscular exercises
    - ROM normalized to preinjury level

- **Phase 3**
    - ROM is normal, strength and neuromuscular control are near normal
    - No pain or apprehension on clinical tests
    - Progress to:
        - Intensive strength and endurance drills
        - Plyometrics
        - Interval throwing program
            - Vary distance, rest periods, throwing intensity
            - Throw on and off mound

- **Phase 4**
    - Advanced interval throwing program
    - Position specific throwing
    - Strength and neuromuscular maintenance program

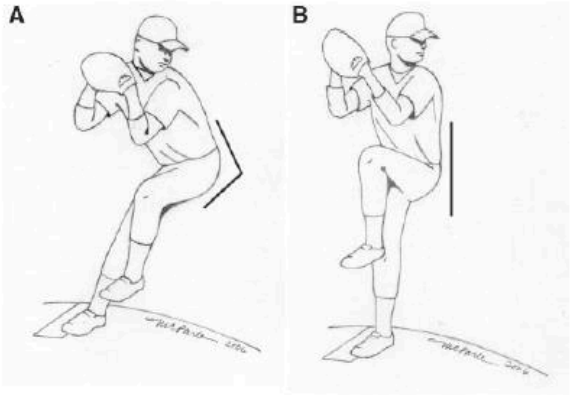


Figure 1. A, leading toward home plate with the hips—defined as the pelvis leading the trunk toward home plate during the early cocking phase; B, any pitcher who remained vertical in the early cocking phase did not lead with the pelvis. The authors thank Maxwell C. Park, MD, for the illustrations.

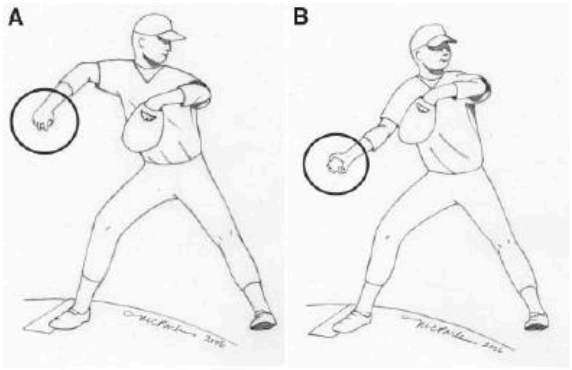


Figure 2. A, hand-on-top position—defined as the throwing hand being on top of the ball (forearm in pronation) as it comes out of the glove during early cocking; B, hand under the ball (forearm in supination). The authors thank Maxwell C. Park, MD, for the illustrations.

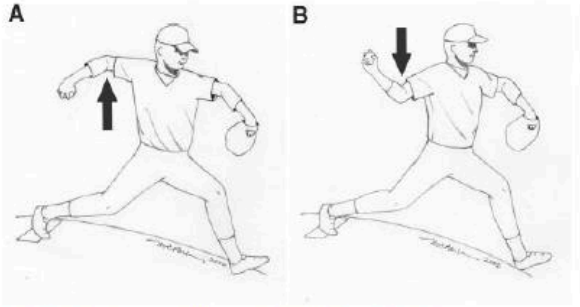


Figure 3. A, arm in throwing position—defined as the elbow reaching its maximum height (glenohumeral abduction) by stride foot contact; B, any pitcher whose elbow was not at its highest point by stride foot contact did not have the arm in throwing position. The authors thank Maxwell C. Park, MD, for the illustrations.

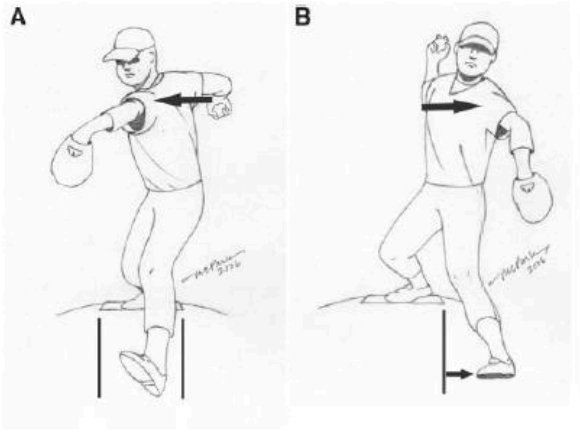


Figure 4. *Parameter 4:* A, closed-shoulder position—defined as the lead shoulder being in a closed position and pointing toward home plate at stride foot contact; B, open position. *Parameter 5:* A, stride foot toward home plate—defined as the stride foot being pointed toward home plate at stride foot contact; B, foot not pointed toward home plate. The authors thank Maxwell C. Park, MD, for the illustrations.

From:

The effect of pitching biomechanics on the upper extremity in youth and adolescent baseball pitchers.
Davis JT, Limpisvasti O, Fluhme D, Mohr KJ, Yocum LA, Elattrache NS, Jobe FW. Am J Sports Med. 2009 Aug;37(8):1484-91.