

Shoulder Dislocation Reduction Techniques

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Shoulder dislocations are one of the most common musculoskeletal injuries seen in the ED. They account for more than 50% of major joint dislocations with an incidence of 17/100,000. **Anterior** dislocations are the most common ranging from 95-97%. To increase success, procedural sedation or intra-articular local anesthetic can be used for reduction. There are many techniques to reduce a shoulder, all shown to have success. The methods should be simple and quick to ensure no additional injury to the shoulder. It behooves physicians to know various techniques because one way is not always successful. Various techniques are described below:

- **Traction-Countertraction**
 - Requires assistant
 - Assistant places folded sheet around chest to apply countertraction while traction applied along abducted arm
 - <http://vimeo.com/8605660> (3:58)

- **External Rotation**
 - Can be done without assistance, well tolerated by patients, and can be performed without sedation
 - Slightly slower than other methods taking 5-10 minutes
 - Patient supine, arm is slowly adducted, elbow flexed to 90 degrees and then slow external rotation applied
 - External rotation should be stopped each time patient has pain and then continued when patient relaxed
 - Success rate from 80-90%
 - <http://emedicine.medscape.com/article/109130-technique#aw2aab6b4b4>

- **Scapular Manipulation**
 - Aim is to reposition glenoid fossa
 - Can be quick and generally tolerated well by patients, but need assistance and can be difficult to identify borders in obese patients
 - Patient prone or seated with affected arm in slight traction held at forward flexion to 90 degrees.
 - Stabilize superior aspect of scapula with one hand while adducting the inferior tip
 - Success rate >85%
 - <https://www.youtube.com/watch?v=Cig7XRH8cZs>

- **Milch Technique**
 - Can be done without assistance or procedural sedation
 - Position affected arm overhead by patient themselves or physician. Apply gentle longitudinal traction and external rotation. Stop when resistance is met and continue when patient relaxed again

- Apply gentle traction and lateral/superior pressure to the humeral head with free hand if not reduced
- Reported success rate of 75-95% on first attempt
- <http://emedicine.medscape.com/article/109130-technique#aw2aab6b4b5>
- **FARES (FAst, REliable, and Safe)**
 - New method described in 2009
 - Modified Milch
 - Performed without any sedation, anesthesia, or analgesia
 - Hold patient's wrist with gentle traction and oscillate outstretched arm in ant/posterior direction while abducting, once at 90 degrees, externally rotate arm
 - Reduction typically around 120 degrees of abduction
 - Study that described method reported 88.7% success
 - <http://vimeo.com/8605660>
- **Spaso**
 - New method described in 1998
 - No assistance, minimal force
 - Patient supine, operator holds wrist and applies gentle traction upward aiming toward ceiling and arm is externally rotated
 - One study reports 87.5% success with premedication but new method and has not been studied extensively
 - <http://vimeo.com/8605660> (3:10)
- **Cunningham**
 - No assistance, analgesia, or sedation
 - Patient sitting up with back vertical preferably on chair and have them shrug shoulder superiorly and posteriorly. Move arm so it is adducted and elbow flexed at 90 degrees and have patient's hand rest on operator's upper arm or shoulder
 - Apply gentle traction downwards while massaging trapezius, deltoid, and biceps until reduction occurs but typically no sound or "clunk" is felt.
 - https://www.youtube.com/watch?v=MkdCGV_MOCM
- **Stimson**
 - No assistance, does not need procedural sedation
 - Patient prone with affect arm hanging down, then weight is suspended from the wrist in increasing increments
 - Can take up to 15-20 minutes
 - Modifications include flexion of elbow to 90 degrees to relax biceps tendon
 - Reported 96% success rate with scapular manipulation



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- **Snowbird**

- Seated in chair and arm supported in other arm
- 3 foot loop of 4 inch stockinette is placed along proximal forearm with elbow at 90 degrees and patient told to sit up while physician stands on loop of stockinette to provide downward traction while free hand applies external pressure or rotation
- Reported success rate of 97%

- ~~**Kocher**~~

- One of oldest techniques first described in 1870
- No longer recommended because of high incidence of complications including axillary nerve injury, humeral shaft and neck fractures, and capsular damage.
- Patient's arm fully adducted against body while elbow bent at 90 degrees, externally rotate to 70-85 degrees until resistance is felt, then lift arm in sagittal plane forward and then internally rotate
- Do not use traction
- <https://www.youtube.com/watch?v=jD0eAuctHoo#t=13Hippocratic>

- ~~**Hippocratic**~~

- Not recommended like Kocher because of high incidence of complications
- Operator puts foot in patient's padded axilla and applies traction arm
- <https://www.youtube.com/watch?v=Z5v8Tb2-11Y> (0:37)

References / Further Reading:

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2. Ufberg et al. "Anterior shoulder dislocations: Beyond traction-countertraction." J Emer Med. 27 (3). 2004. 301-306
3. Sayegh FE, Kenanidis EI, Papavasiliou KA, Potoupnis ME, Kirkos JM, Kapetanos GA. Reduction of acute anterior dislocations: a prospective randomized study comparing a new technique with the Hippocratic and Kocher methods. J Bone Joint Surg Am. 2009 Dec;91(12):2775-82.
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5. <http://shoulderdislocation.net/>
6. <http://emedicine.medscape.com/article/109130-technique#aw2aab6b4b4>
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