

The risk factors for recurrent shoulder instability following a first time traumatic anterior shoulder dislocation in children under the age of 18: A systematic review.

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Critically Appraised Topic

Clinical Scenario: Rates of recurrent shoulder instability following a first time traumatic anterior shoulder dislocation (FTASD) have been reported to be as high as 100% in children and young adolescents. Various factors such as age-related changes in the composition of the glenoid labrum and joint capsule, and skeletal immaturity may influence rates of recurrent instability in this young population. A systematic review of the risk factors which influence recurrent shoulder instability following a FTASD in the skeletally immature was conducted. The findings of this review will identify the relevant risk factors of further shoulder instability which would allow appropriate treatment alternatives to be targeted to children who are most at risk. Children under the age of 18 years who had suffered a FTASD documented radiographically or clinically were included in the systematic review. Data was extracted from studies if there was a follow-up period of one year or more and the primary outcome measure was rate of recurrence of shoulder instability.

Clinical Question: What are the key variables that predict recurrent shoulder instability following a first-time traumatic anterior shoulder dislocation in children under the age of 18 years?

Summary of Key Findings: A total of 2385 studies were identified following the literature search, of which five retrospective cohort studies met the inclusion and exclusion criteria. Ten risk factors were identified across the included studies. Age related changes were detected in all five studies as 91% of participants aged 14 years and over experienced a recurrent instability event, compared with 52.5% of participants aged 13 and younger who experienced recurrent instability. With regards to sex, 84% of males experienced recurrent instability compared with 52% of females. In those with an open physis, 53% experienced recurrence compared with 94% of those with a closed physis. One study demonstrated a relationship between a humeral avulsion of the glenohumeral ligament and recurrent instability. No significant relationship existed between shoulder dominance or mechanism of injury and recurrent shoulder instability. The evidence for the association between Hill Sachs lesions, greater tuberosity fractures and Bankart lesions and recurrent instability was conflicting.

Clinical Bottom Line: Male children over the age of fourteen had the greatest risk of suffering from recurrent shoulder instability. Skeletal maturity also appeared to affect the rate of recurrent instability. Further examination of this population with blinded prospective cohort studies will strengthen the evidence in this area, and assist clinicians in the appropriate management of FTASD.

Strength of Recommendations: Although age, sex and skeletal maturity were identified as key risk factors in the development of recurrent shoulder instability in

children and adolescents, the strength of recommendations of these findings using the GRADE criteria is weak based on the low to moderate study quality.