



# Shoulder Instability

# Research

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## Shoulder Instability and Labral Repairs are Greatly Enhanced with New Double-Row Repair Strategies

Shoulder instability with dislocations or painful labral tears affect a spectrum of athletes including collision athletes such as football players or repetitive overhead throwing athletes such as baseball pitchers. Often these injuries require surgery. The ideal surgical procedure repairs the torn labrum while minimally altering normal anatomy during the procedure. Furthermore, creating a repair that accelerates healing and

with great strength can enhance results and avoid failures when returning to sport. Dr. Christopher Ahmad developed a double row repair of the labrum to create the strongest and most favorable healing environment. This repair was studied in Columbia Orthopedics Biomechanics Laboratory. The purpose was to evaluate the normal glenoid insertional anatomy of the anterior-inferior capsulolabral complex and to compare the ability

of a single-row repair and a double-row suture bridge repair to restore the insertional anatomy. Eight fresh frozen cadaver shoulders were dissected and the native glenoid insertion of the anterior-inferior capsulolabral complex was digitized. Bankart lesions were created, the shoulders were randomized to receive either the standard single-row suture anchor repair or a double-row suture bridge repair, and the insertion repair sites



### Christopher S. Ahmad, MD

Dr. Christopher Ahmad studied mechanical engineering at Columbia University setting a foundation to become an expert in shoulder injuries. He is the Chief of the Sports Medicine Service and the Head Team Physician for the New York Yankees. He has been researching and performing shoulder instability surgery, SLAP repairs, and labral repairs for 15 years. He has published over 100 articles related to labral tears and shoulder instability and is referred elite athletes and patients with the most complex injuries or failed surgery on a regular basis. He has become well known for pioneering the most advanced surgical techniques for collision and throwing athletes.

# Applying Research to Improve Patient Outcomes

*“This new labral repair may enhance healing by increasing the surface area for healing.”*



were then digitized. The single-row repair recreated 42.3% of the native footprint surface area while the double-row repair recreated 85.9%. The double-row repair was significantly larger and recreated significantly more of the native

footprint compared with single-row repair ( $p < 0.01$ ). Double-row repair of the capsulolabral complex reestablishes the native insertional footprint on the anterior inferior glenoid better than a single-row repair. This new labral repair may enhance healing by increasing the surface area for healing.

Ahmad CS, Galano GJ, Christian Vorys G, Covey AS, Gardner TR, Levine WN: Evaluation of Glenoid Capsulolabral Complex Insertional Anatomy and Restoration with Single and Double Row Capsulolabral Repairs. *Journal of Shoulder and Elbow Surgery*, 18: 948-954, 2009

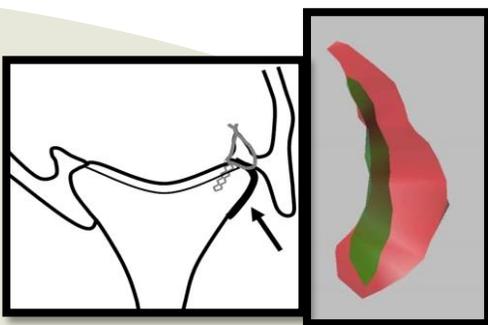


Figure 1: Single-row labral repair poorly restores the native normal insertion.

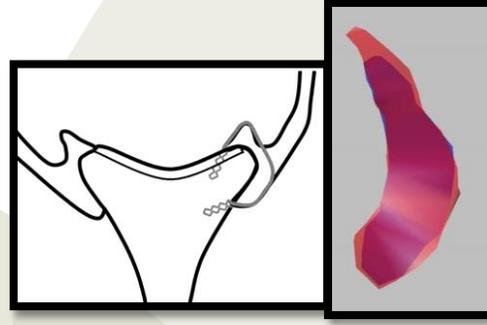


Figure 2: Double-row labral repair restores the native normal insertion.

## ANATOMY ASSESSMENT



Anatomy restoration is perhaps the most important principle in sports medicine. Our lab has created 3-dimensional measurement tools to accurately characterize anatomy before and after surgical reconstruction.

To see more research or watch a video of labral repair being performed by Dr. Christopher Ahmad, please go to [www.ChrisAhmadMD.com](http://www.ChrisAhmadMD.com)

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