

What I have Learned in Over a Decade of Labral Repair

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I. My Experience: Over 4,000 surgeries in Vail

80% athletes

30% elite athletes

II. Athletes At-Risk – Must determine the motion at risk

Repetitive forceful hip rotation – Baseball

Extreme hip range of motion – Ballet

III. Athletes At-Risk – Trauma

IV. Rapid Evolution in the last 10 years

Better diagnostician

Better instrumentation

Better Educational Opportunities

More Outcomes Reported

2000	2012
5000 cases	150,000 cases
Labral debridement	Labral reconstruction

V. Evolution of Treatment of Labral Tears

1. Resection

2. Debridement *Very similar to Meniscus*

3. Repair

4. Reconstruction

VI. Over Last 10 Years the Labrum Has Been Defined

a. Role of Labrum

i. Not completely understood

ii. Provides a seal against fluid flow in and out of the intra-articular space

iii. Provides a suction effect, thus further enhancing stability

iv. Contact stresses in acetabular cartilage increase with time, and up to 92% higher in the absence of the labrum

b. Vascularity of the Labrum

i. Capsule provide major contribution of vascularity to the labrum

c. Labrum Healing Potential

i. Ability of the peripheral capsular vasculature of the menisci to support a healing response in meniscal repair has provided the rationale for the clinical repair of peripheral labral lesions

d. Consequences of lost labral tissue

- i. Resected labrum was replaced with tissue without circumferential fiber bundles (Miozzari HH, et al. 2004;12:419-430)
- ii. 43% and 60% less force was required to distract the femur by 3mm after venting and creation of the tear Was triangular in shape (Crawford MJ, et al. CORR 2007)
- iii. Labral tears lead to decreased femoral stability during extreme ranges of motion
- iv. Reduced stiffness of the injured labrum makes the joint susceptible to increased impact loading and repetitive microtrauma
- v. Labral tear results in a significant increase in fluid efflux
- vi. Decreased in intra-articular fluid pressurization
- vii. Torn labrum decreases the strength of the suction seal to resist distraction

VI. Evolution of Treatment of Labral Tears - Repair

i. Preserve tissue

- b. Study demonstrated statistically significant improvement in Harris hip scores and VAS pain scores in labral repair versus labral debridement. (Larson CM et al. AJSM 2012)
- c. Increased cartilage strain after labral resection when compared to labral repair (Greaves LL, et al. J Biomech. 2010)

ii. When to repair the labrum

- a. Address concomitant pathology (FAI, instability)
- b. Take into consideration the chondral/osseous interface
- c. Labral Detachment and Rim Trimming
 - i. Important to consider the pre-op center-edge angle to avoid over-resection

VII. Evolution of Treatment of Labral Tears - Reconstruction

i. Innovation to solve lack of tissue

ii. When to reconstruct the labrum

- a. A complex tear that completely disrupts the longitudinal fibers and which cannot be repaired primarily
- b. Decision to reconstruct the labrum is made at time of arthroscopic exam

iii. Who Gets a Labral Reconstruction

- a. Young, active patients
- b. Patients with instability in which labral debridement would worsen condition
- c. Patients with prior labral debridements who have recurrent symptoms and

VIII. Why Preserve the Labrum?

- i. Seal between acetabulum and femoral head
- ii. Stability
- iii. Restore cartilage coverage
- iv. Distribute forces
- v. Maintain synovial fluid

IX. Improvements over the last 10 years

- i. Rim Trimming – consider center edge angle when trimming
- ii. Safe Anchor Placement – use the acetabular rim angle as a anatomic measurement for safety margin when inserting anchor.
- iii. Anatomic Anchors Specific for Labral Repair
 - a. 3 o'clock just above the psoas U
- iv. Always evaluate the repair with dynamic exam
 - a. Ensure labrum lies on femoral head and recreates seal
 - b. Can add additional sutures for stability and seal
 - c. Confirm full decompression of FAI if osteoplasty or rim trimming was performed

X. Outcomes

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XI. Conclusions

- i. Patient selection is critical
- ii. Elite athletes have high expectations but many non-elite athletes have same level of expectations
- iii. Return to activity is important to all patients and important to overall health
- iv. Functional rehabilitation helps elite and non-elite athletes return to activity

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