

Author Reply to “Letter to the Editor Regarding ‘Comparison of Suction Seal and Contact Pressures Between 270° Labral Reconstruction, Labral Repair, and the Intact Labrum’”



We thank the Editor for providing us the opportunity to respond to the letter by Jimenez et al. concerning our recent article entitled “Comparison of Suction Seal and Contact Pressures Between 270° Labral Reconstruction, Labral Repair, and the Intact Labrum.”¹ Their feedback on our study is greatly appreciated, and we not only continue to encourage other colleagues to reach across the aisle to provide critical analysis of the continually growing femoroacetabular impingement syndrome literature but also welcome them to provide an additional voice on the importance of continued research in the area of labral reconstruction. There is power in numbers. We agree that few venture to evaluate their own work or publicly provide self-insight on the necessity for refining techniques. Our understanding of hip preservation is constantly evolving and so should our methods of addressing hip pathologies.

As stated by Jimenez et al., previous studies have shown that the biomechanical properties of labral repair and segmental reconstruction indicate that they have similar intra-articular pressures to those in the intact state. In light of emerging techniques that involved complete resection and subsequent reconstruction of the labrum, we felt the need to determine whether the biomechanical profiles, including the intra-articular pressure, contact area, and suction seal of the joint, were similar to those in the labral repair and intact states. Although the conclusions drawn are narrowed by the inherent limitations of a cadaveric study, our observations indicate that, in fact, the 270° reconstruction may increase intra-articular pressures, decrease intra-articular area, and violate the suction seal. Previous studies have suggested that cumulative contract stress and elevated pressures in the hip joint are predictive of early hip osteoarthritis.²⁻⁴ Additionally, the suction seal of the hip is thought to play an important role in hip stability and in maintaining the synovial pressure required for normal hip mobility and preventing chondral damage.⁵⁻⁷ We recognize, however, that our study is further limited in some methodologic aspects, including only qualitatively evaluating the hip suction seal, and we urge others to pursue

studies evaluating quantitative biomechanical differences, as well as assessing the impact of emerging labral techniques through both in vivo and cadaveric models. We thank the leaders in hip arthroscopy innovation, including the senior author of the letter from Jimenez et al., who advance our knowledge in the field of hip preservation and encourage others to do so as well.

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References

1. Suppauksorn S, Beck EC, Chahla J, et al. Comparison of suction seal and contact pressures between 270° labral reconstruction, labral repair, and the intact labrum. *Arthroscopy* 2020;36:2433-2442.
2. Day WH, Swanson SA, Freeman MA. Contact pressures in the loaded human cadaver hip. *J Bone Joint Surg Br* 1975;57:302-313.

3. Mavcic B, Iglc A, Kralj-Iglc V, Brand RA, Vengust R. Cumulative hip contact stress predicts osteoarthritis in DDH. *Clin Orthop Relat Res* 2008;466:884-891.
4. Cooperman DR. How good is the evidence linking acetabular dysplasia to osteoarthritis? *J Pediatr Orthop* 2019;39: S20-S22.
5. Ferguson SJ, Bryant JT, Ganz R, Ito K. The influence of the acetabular labrum on hip joint cartilage consolidation: A poroelastic finite element model. *J Biomech* 2000;33: 953-960.
6. Ferguson SJ, Bryant JT, Ganz R, Ito K. An in vitro investigation of the acetabular labral seal in hip joint mechanics. *J Biomech* 2003;36:171-178.
7. Ferguson SJ, Bryant JT, Ganz R, Ito K. The acetabular labrum seal: A poroelastic finite element model. *Clin Biomech (Bristol, Avon)* 2000;15:463-468.