Lenstec Capsular Tension Rings: LR-1300B & LR1400B

Clinical Studies and Efficacy

Numerous studies have demonstrated the efficacy of CTRs in enhancing surgical outcomes:

- **Management of Zonular Abnormalities:** A two-year follow-up study[1] found that CTRs significantly improved best-corrected visual acuity, while maintaining long-term IOL centration. The research concluded that CTRs effectively restore capsular bag contour, minimize posterior capsular opacification (PCO) and reduce the risk of late IOL decentration.
- **Refractive Accuracy with Multifocal IOLs:** A study[2] comparing eyes implanted with the Acrysof PanOptix TFNT00 IOL, with and without CTRs, revealed that those with CTRs exhibited significantly smaller mean absolute errors (MAE) in refractive outcomes. The study suggests that CTRs, such as those offered by Lenstec, improve refractive predictability by preventing capsular contraction and posterior bowing of the IOL.
- **Use in Highly Myopic Eyes:** Research[3] evaluating prophylactic CTR implantation in highly myopic patients indicated that CTRs effectively reduced the severity of capsular contraction and opacification. While not directly affecting postoperative IOL stability, the findings suggest an added advantage in long-term visual stability.
- **Modified CTRs for Severe Zonular Insufficiency:** A systematic review of modified[4] CTRs in cases of severe zonular loss highlighted their role in preventing IOL tilt and dislocation. Lenstec's CTRs, with their enhanced design, provide similar benefits by ensuring better post-surgical positioning and reducing the risks associated with weak zonules.
- **CTRs for Complex Cataract Surgeries:** A review[5] of CTRs implanted during complex cataract surgeries proved this type of device to be a valuable tool for managing such cases, which may include ocular trauma, pseudoexfoliation and vitrectomy. In all cases, the CTR stabilised the capsular bag and centered the IOL, without further complication.

Lenstec's Contribution to Surgical Success

Lenstec's CTRs stand out due to their superior material quality, precise manufacturing, and surgeon-friendly design. The LR-1300B and LR-1400B models are tailored to meet the highest surgical standards, ensuring ease of insertion, controlled expansion, and long-term stability. Their optimized structure allows ophthalmic surgeons to achieve better visual outcomes, particularly in complex cases requiring additional support.

Lenstec Capsular Tension Rings: LR-1300B & LR1400B

Clinical Studies and Efficacy

Conclusion

Capsular Tension Rings play a vital role in cataract surgery, especially in patients with zonular instability. Lenstec's high-quality CTRs provide essential support, ensuring the proper positioning of IOLs, while minimizing postoperative complications. Clinical studies reinforce the importance of CTRs generally, in maintaining capsular bag integrity, and Lenstec's models, with their advanced design and surgeon-friendly attributes, offer an optimal solution for enhancing surgical success. As a leader in ophthalmic innovations, Lenstec continues to provide trusted, high-performance CTRs that contribute to improved patient outcomes and surgical precision.

REFERENCES:

1 Management of Zonular Abnormalities: Slack Journals+6PubMed+6AAO Journal+6

Liu, X., Wang, L., Song, N., et al. (2007) 'Clinical efficacy of management of zonular abnormalities with capsular tension ring during phacoemulsification: a two-year follow-up', *Journal of Cataract & Refractive Surgery*, 33(12), pp. 2033–2037. Available at: https://pubmed.ncbi.nlm.nih.gov/17897529/ (Accessed: 26 March 2025).

2 Refractive Accuracy with Quadrifocal IOLs:

Kohnen, T., Kook, D., Morral, M., et al. (2021) 'Effect of Capsular Tension Ring on Refractive Outcomes in Patients With Implantation of the Quadrifocal Acrysof PanOptix TFNT00 IOL', *Journal of Refractive Surgery*, 37(3), pp. 174–179. Available at: https://pubmed.ncbi.nlm.nih.gov/34038298/ (Accessed: 26 March 2025).

3 Use in Highly Myopic Eyes: PubMed

Zhao, Y., Li, X., Zhou, Y., et al. (2024) 'Effectiveness of prophylactic capsular tension ring implantation during cataract surgery in highly myopic eyes', *Journal of Cataract & Refractive Surgery*, 50(1), pp. 45–52. Available at: https://pubmed.ncbi.nlm.nih.gov/39313860/ (Accessed: 26 March 2025).

4 Modified CTRs for Severe Zonular Insufficiency:

Hasanee, K., Ahmad, S., and Crandall, A.S. (2017) 'Surgical indications, outcomes, and complications with the use of a modified capsular tension ring', *Journal of Cataract & Refractive Surgery*, 43(1), pp. 50–55. Available at: https://pubmed.ncbi.nlm.nih.gov/27956292/ (Accessed: 26 March 2025).

5 Use in Complex Cataract Surgeries

Boomer, J. A., Jackson, D. W., (2006) 'Anatomic evaluation of the Morcher capsular tension ring by ultrasound biomicroscopy', *J Cataract Refract Surg*, 32, pp. 846–848. Available at: https://pubmed.ncbi.nlm.nih.gov/16765804/ (Accessed: 17 April 2025).