

Extraocular training in Descemet membrane endothelial keratoplasty (DMEK)

Treinamento extraocular em ceratoplastia endotelial com membrana de Descemet (DMEK)

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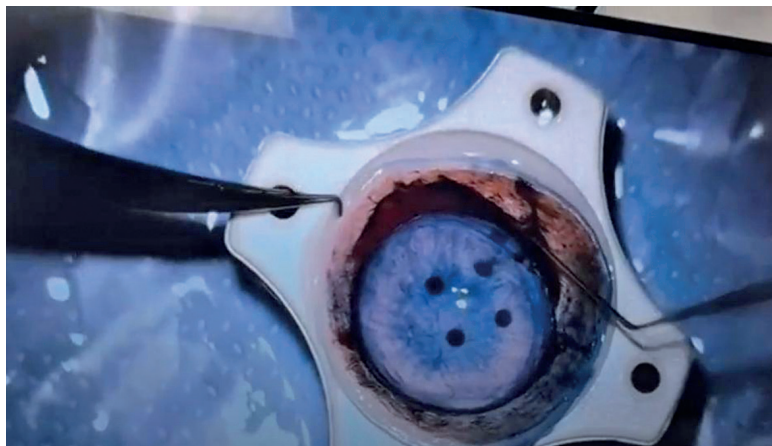
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This study presents the development of an extraocular simulator for training in the critical stages of Descemet membrane endothelial keratoplasty (DMEK). It aimed to provide a practical and reproducible tool that allows surgeons to improve their technique before working in a real surgical environment and thereby help optimize their learning curve and improve surgical outcomes.

The simulator enables repeated training in three key stages of the technique: graft preparation, descemetorhexis, and unfolding of the endothelial tissue. Training in a safe and reproducible environment promotes the development of precision skills, confidence, and standardization of movements, which are essential aspects for the proper execution of the procedure.

This proposal is especially relevant in the Brazilian context, where long waiting lists for corneal transplants place a high value on each procedure performed. In this scenario, strategies that promote training and reduce technical errors play a fundamental role in the optimization of surgical outcomes.

Given that DMEK is a technique with well-established benefits in terms of visual recovery and lower rejection rates^(1,2), we believe that investing in structured and repetitive training is part of a surgeon's commitment to provide the best possible care to patients.



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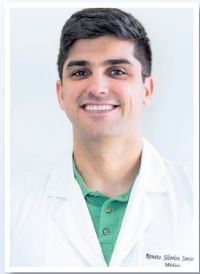
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REFERENCES

1. Melles GRJ, Ong TS, Ververs B, Van der Wees J. Descemet membrane endothelial keratoplasty (DMEK). *Cornea*. 2006;25(8):987-90.
2. Stuart AJ, Romano V, Virgili G, Shortt AJ. Descemet's membrane endothelial keratoplasty (DMEK) versus Descemet's stripping automated endothelial keratoplasty (DSAEK) for corneal endothelial failure. *Cochrane Database Syst Rev*. 2018 Jun 25;6(6):CD012097.

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