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**Title:**

Introduction of deep incision keratomes for ultrathin lenticules in DSAEK

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**Setting:**

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**PURPOSE:**

Evaluation of clinical outcome applying DSAEK (descemet stripping automated endothelial keratoplasty) performed with new developed Gebauer stainless steel re-usable DSAEK-heads 500µm and 550µm cutting depth for the one pass technique.

**SETTINGS:**

All eyes were operated by one surgeon using donor material with organ cultured or cold preserved corneas. Depending from the overall thickness of the cornea the different Gebauer SLc System heads were used.

Initial donor cornea thickness was different. Every cornea was measured before cutting several times with handheld pachymetry. Descemet's stripping insertion the posterior trephined lamellae and fixation with air bubble. Follow-up examinations: dislocation rate, best-corrected visual acuity (BCVA), refraction, IOP, OCT pachymetry.

**RESULTS:**

The remaining thickness of the donor was within +/- 20 µm of the intended depth. Neither dislocation nor pinholes were observed during the cutting process. Harvested lenticules were between 60-84 µm calculated thickness and therefore easy to be handled in the implantation maneuver.

**CONCLUSIONS:**

The procedure to cut ultrathin graft with one pass technique with the new developed stainless steel DSAEK-heads is a safe and produces reliable results to produce ultrathin lenticules without the need of deswelling the donor tissue prior to cutting or to apply a twice cutting. The new device results to our knowledge the first time in a complete independency of donor material.

**FINANCIAL DISCLOSURE:**

no