The DMEK Triple:  
*Are We Any Closer to Emmetropia?*

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We previously reported superior refractive predictability with the DLEK Triple compared to the PK Triple.

And even better refractive predictability with the DSAEK Triple.
Purpose

• To determine whether the new DMEK Triple delivers predictable refractive outcomes compared to our previously reported results with the DSAEK Triple.
Study Design

100 Consecutive DMEK Cases for Fuch’s
- 43 DMEK only
- 57 Triple Procedures
  - 6 eyes excluded for factors confounding visual acuity
- 51 Standard Cases
  - 16 eyes excluded for myopic refractive targets or unavailable 6-month data
- 35 eyes with 6-month follow-up and emmetropic refractive targets
Study Design

Devers Standardized DMEK technique

- Pre-stripped tissue from the Lions VisionGift
- S-Stamp
- Overstripping of the recipient
- Straiko glass injector
- No-touch tap technique (DMEK “Dance”)
- 20% SF6 bubble
Study Design

• Emmetropia was targeted by selecting IOLs for a -0.70 D SE to account for the hyperopic shift after DMEK

• Biometry was performed with the LenStar

• BSCVA was measured with a Snellen projector system
Study Design

Primary Outcome Measures:
- Manifest refraction

Secondary Outcome Measures:
- CCT
- BSCVA
Results

Central Corneal Thickness After DMEK Triple

- Pre-Op: 604 microns
- 6 months: 524 microns

* P <0.001
Results

BSCVA After DMEK vs. DSAEK Triple

<table>
<thead>
<tr>
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<th>Pre-Op</th>
<th>POM 6</th>
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<tbody>
<tr>
<td>DSAEK</td>
<td>20/36 (n=35)</td>
<td>20/24 (n=35)</td>
</tr>
<tr>
<td>DMEK</td>
<td>20/52 (n=122)</td>
<td>20/31 (n=122)</td>
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* P <0.001
### Results

**SE 6-months After DMEK vs. DSAEK Triple**

- **DMEK**
  - $-0.28 \pm 0.71$ D
  - (Range: -1.63 to +1.25)
  - Median: -0.50 D

- **DSAEK**
  - $0.11 \pm 1.08$ D
  - (Range: -2.38 to +5.00)
Results

Frequency of SE within < 1 D of Emmetropia After DLEK vs. DSAEK vs. DMEK Triple

- DLEK, 12 mo: 56%
- DSAEK, 12 mo: 74%
- DMEK, 6 mo: 89%
Conclusions

• The DMEK Triple delivers a greater frequency of refractive outcomes within < 1 D of emmetropia than the DSAEKC Triple

• This may be because DMEK achieves a more anatomic CCT and posterior corneal curvature

• Selecting IOL targets that account for anticipated shifts in CCT and corneal curvature might further optimize refractive predictability