The safety and efficacy of Laser Vision Correction in a Large Corporate Practice

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The author of this poster is a consultant for AcuFocus and AMO
Optical Express Clinical Structure

- 34 laser centers
  - UK, Ireland, Netherlands, Germany, France, USA
- 27 surgeons and 138 optometrists
- International Medical Advisor Board
- Complete refractive solutions
- Electronic medical records
- Biostatistics department
Laser Vision Correction

• Consecutive treatments in 2008
  – 25,732 pts; 50,027 eyes
• Procedures: LASIK & LASEK
• Equipment
  – Excimer laser VISX S-4
  – Keratome
    • Intralase FS-60
    • Disposable Moria
• Followup 1 day, 1 wk, 1 and 3 months
• Postoperative patient experience survey
Gender Distribution of Treated Patients

- Male: 34%
- Female: 66%
Age Distribution

25,732 patients
Average: 39.7 yrs
Surgery

Type
- LASIK
- LASEK

Ablation
- WFG
- Standard

Flap
- Intralase
- Mechanical

91%
81%
70%
Preoperative Sphere

50,027 eyes
Mean: -1.91D +/- 2.67D

< -8D: 515 eyes
> +4D: 423 eyes
Preoperative Cylinder

Mean: -0.77D +/- 0.78D

>2D cylinder: 3,188 eyes
1 mo. Results

- Myopia and Hyperopia
- LASIK and LASEK
- Eyes targeted for emmetropia
- Primary treatments

Completed one month examination:
- 45,961 eyes (23,159 pts) (92%)
- No difference in any preop parameter in those who did not complete 1 mo visit
1 mo. Refractive Predictability (MSE)

- +/- 0.5D: 85%
- +/- 1.0D: 97%

Average: -0.08 +/- 0.44D
1 mo. Attempted Vs Achieved Myopia

\[ y = 0.94x - 0.10 \]
\[ R^2 = 0.96 \]

28,211 eyes
1 mo. Uncorrected Acuity

All eyes

<table>
<thead>
<tr>
<th></th>
<th>57%</th>
<th>81%</th>
<th>91%</th>
<th>98%</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/5</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>6/6</td>
<td></td>
<td></td>
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<tr>
<td>6/7.5</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>6/12</td>
<td></td>
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</table>

Optical Express
Vision for a better life
1 mo. Improvement in UCVA

All eyes

Average increase: 9 lines
Equivalent to going from 6/48 to 6/6
1 mo. Change in Best Corrected Vision

- Mean change BCVA: 0.00 LogMAR
- Loss >2 lines BCVA: 0.5% (1:500)
- BCVA within one line of preop: 94.9%
## Complication Rate

50,027 consecutive eyes with at least one month followup

<table>
<thead>
<tr>
<th>Complication</th>
<th>Number</th>
<th>Incidence</th>
<th>1:___</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCVA loss &gt; 2 lines (1 mo.)</td>
<td>170</td>
<td>0.370%</td>
<td>270</td>
</tr>
<tr>
<td>Dry eye</td>
<td>50</td>
<td>0.100%</td>
<td>1,001</td>
</tr>
<tr>
<td>Glare/halos</td>
<td>21</td>
<td>0.042%</td>
<td>2,382</td>
</tr>
<tr>
<td>Other</td>
<td>18</td>
<td>0.036%</td>
<td>2,779</td>
</tr>
<tr>
<td>Mild DLK</td>
<td>14</td>
<td>0.028%</td>
<td>3,573</td>
</tr>
<tr>
<td>Flap striae</td>
<td>11</td>
<td>0.022%</td>
<td>4,548</td>
</tr>
<tr>
<td>Transient light sensitivity</td>
<td>10</td>
<td>0.020%</td>
<td>5,003</td>
</tr>
<tr>
<td>Microbial keratitis</td>
<td>8</td>
<td>0.016%</td>
<td>6,253</td>
</tr>
<tr>
<td>Grade 3/4 DLK</td>
<td>8</td>
<td>0.016%</td>
<td>6,253</td>
</tr>
<tr>
<td>Significant haze</td>
<td>8</td>
<td>0.016%</td>
<td>6,253</td>
</tr>
<tr>
<td>Postop cyl &gt; 2D</td>
<td>7</td>
<td>0.014%</td>
<td>7,147</td>
</tr>
<tr>
<td>Flap creation complication</td>
<td>7</td>
<td>0.014%</td>
<td>7,147</td>
</tr>
<tr>
<td>Sterile infiltrates</td>
<td>5</td>
<td>0.010%</td>
<td>10,005</td>
</tr>
<tr>
<td>Epithelial ingrowth</td>
<td>5</td>
<td>0.010%</td>
<td>10,005</td>
</tr>
<tr>
<td>Crystalline lens changes</td>
<td>4</td>
<td>0.008%</td>
<td>12,507</td>
</tr>
<tr>
<td>Ectasia</td>
<td>3</td>
<td>0.006%</td>
<td>16,676</td>
</tr>
<tr>
<td>Delayed healing</td>
<td>2</td>
<td>0.004%</td>
<td>25,014</td>
</tr>
<tr>
<td>Recurrent erosions</td>
<td>2</td>
<td>0.004%</td>
<td>25,014</td>
</tr>
<tr>
<td>Elevated IOP</td>
<td>2</td>
<td>0.004%</td>
<td>25,014</td>
</tr>
<tr>
<td>Incorrect treatment</td>
<td>2</td>
<td>0.004%</td>
<td>25,014</td>
</tr>
<tr>
<td>Retinal detachment</td>
<td>2</td>
<td>0.004%</td>
<td>25,014</td>
</tr>
<tr>
<td>Decentered ablation</td>
<td>1</td>
<td>0.002%</td>
<td>50,027</td>
</tr>
<tr>
<td>Total</td>
<td>360</td>
<td>0.72%</td>
<td>139</td>
</tr>
</tbody>
</table>
Conclusions

LASIK is safe and effective as delivered by a corporate provider

• Sound clinical governance
• Exceptionally robust database
• Outstanding clinical outcomes
• Very low complication rate