Cessation of Soft Contact Lens Wear Prior to Refractive LASER- is Two Weeks Long Enough?

Aoife Lloyd McKernan  
*Dublin Institute of Technology, aoifemarie.lloyd@dit.ie*

Luisa Simo Mannion  
*Plymouth State University*

Linda Moore  
*Dublin Institute of Technology*

Follow this and additional works at: [https://arrow.dit.ie/otpomoth](https://arrow.dit.ie/otpomoth)

Part of the [Optometry Commons](https://arrow.dit.ie/otpomoth)

Recommended Citation  
Lloyd, A, Simo Mannion, L, O’Dwyer, V. Moore, L., Cessation of soft contact lens wear prior to refractive laser surgery- is two weeks long enough? Poster presentation, American Academy of Optometry. Boston, USA, October 2011.
Introduction

Soft contact lens (CL) wear can result in changes to corneal structure. Resolution time, following removal of the CL, can vary with recovery rates of between 2.5 ± 2.1 to 11.6 ± 8.5 weeks depending on lens type.

Regulations regarding cessation of CL wear prior to refractive laser surgery can vary according to the regulating body. Current FDA guidelines recommend soft CLs are left out for at least 6 weeks prior to examination and treatment.

The Royal College of Ophthalmologists (U.K.) recommend leaving CL for 1 day before consultation and do not specify any time before refractive surgery treatment.

Aims

• To investigate the influence of CL wear on corneal measurements prior to refractive LASER surgery.

• To assess impact of CL wear on outcomes of refractive LASER surgery.

Materials and methods

• A retrospective analysis was undertaken for a group of full-time soft CL wearing patients, CL group (n=45), and a group of patients that did not wear CL, NCL group (n=45), who presented for refractive laser surgery between 2007 and 2009.

• Myopic patients with astigmatism of ≤1.5DC were included for analysis.

• Full-time CL wear was defined as wearing soft CL ≥5 days a week in the previous year.

• Data was obtained from the first consultation (C1) and the second consultation (C2) when the CL wearers had ceased CL wear for 2 weeks.

Anterior segment imaging using a Pentacam

Results

The profile of the CL and NCL groups are described in table 1.

<table>
<thead>
<tr>
<th>Demographic data</th>
<th>CL (n=45)</th>
<th>NCL (n=45)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ± SD</td>
<td>Mean ± SD</td>
<td>Mean ± SD</td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td>32 ± 7.5</td>
<td>37 ± 15</td>
<td>0.075</td>
</tr>
<tr>
<td>Sex</td>
<td>Male: 22</td>
<td>Female: 23</td>
<td>0.299</td>
</tr>
<tr>
<td>Corneal thickness (mm)</td>
<td>D-5: 0.571</td>
<td>E-1: 1.84</td>
<td>0.003</td>
</tr>
<tr>
<td>CL wear</td>
<td>11</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Table 1: Analysis of demographic data obtained from the CL and NCL groups. CL group is defined as a group wearing soft CLs >5 days a week before being assessed, and NCL group shows no significant differences between the genders of the population.

Table 2: Analysis of demographic data obtained from the CL and NCL groups. CL group is defined as a group wearing soft CLs >5 days a week before being assessed, and NCL group shows no significant differences between the genders of the population.

Table 3: Unrelated distance VA measurements taken post operatively at 1.3 and 6 months show that results at 1 month were unmeasurable at 3 months. LASIK patients showed no significant differences in VA measured between pre-operative CL and NCL groups. LASIK/PRK patients had improved VA in group 1 and 6 months compared with the NCL group (p<0.05). Visual Acuity rating VA.

Refractive surgery outcomes

• The difference in VA between the CL and NCL groups that underwent LASER surgery was statistically significant but not clinically significant.

• Improved vision was found in the CL group at 1 and 6 months post LASIK/PRK procedures compared to the NCL group.

Conclusions

• Central and sagittal curvature showed no significant differences between CL groups at C1 or C2. This would indicate corneal stability between the two visits.

• The significant flattening in tangential curvature seen at the inferior cornea in the CL group could indicate that there was a resolution of inferior steepening following cessation of CL wear as the cornea returned to a normal profile shape. This reinforces the fact that tangential curvature is more sensitive than keratometry or sagittal curvature in the detection of small changes in corneal shape.

• Central and nasal corneal thickness following 2 weeks cessation of CL wear were increases in the CL group, which indicated a restoration of the normal shape after corneal warping.

• Contact lens wear appeared to have an influence on corneal measurements prior to refractive LASER surgery; however, it did not appear to have a negative implication for outcomes following refractive surgery.

Literature cited


Acknowledgments

Financial acknowledgement: Ultrasight Ireland.

For further information

Please contact anotherlloyd@iol.ie

Cessation of soft contact lens wear prior to refractive LASER surgery- is two weeks long enough?

Lloyd, A1, Moore, L1, Simo, L2

1 Optometry Dept. Dublin Institute of technology, Dublin, Ireland. 2 Optometry Dept. Plymouth University, Plymouth, U.K.