

 [Print this Page for Your Records](#) [Close Window](#)

**Program#/Poster#:** 1993/B53

**Abstract Title:** **Comparing the Eye's Optical Quality After Phakic IOL and LASIK Surgery**

**Presentation Start/End Time:** Monday, May 07, 2007, 3:00 PM - 4:45 PM

**Location:** Hall B/C

**Reviewing Code:** 204 retinalimagequality - VI

**Author Block:** *J.L. Guell<sup>1</sup>, A.Padilla<sup>2A</sup>, M.Vilaseca<sup>2B</sup>, J.C. Ondategui<sup>2A</sup>, J.Pujol<sup>2B</sup>, F.Díaz-Doutón<sup>2B</sup>, J.Gaytan<sup>1</sup>, J.Tabernero<sup>3</sup>, P.Artal<sup>3</sup>, M.Morral<sup>1</sup>. <sup>1</sup>Cornea-Refractive Surgery Unit, IMO, Barcelona, Spain; <sup>A</sup>CUV, <sup>B</sup>CD6, <sup>2</sup>Technical University of Catalunya, Terrassa - Barcelona, Spain; <sup>3</sup>Laboratorio de Óptica, Universidad de Murcia, Murcia, Spain.*

**Keywords:** 674 refractive surgery: optical quality, 673 refractive surgery: LASIK, 675 refractive surgery: phakic IOL

**Purpose:** To compare the eye's optical quality in mid-high myopic patients after phakic IOL (Verisyse, AMO) and LASIK refractive surgery.

**Methods:** We evaluated the retinal image quality of a group of patients with mid-high myopia (higher than -5D) with a range of ages lower than 40 years, and preoperative best spectacle corrected visual acuity (BSCVA) 20/25 or better, submitted to two different refractive surgery procedures at the IMO center: phakic IOL and LASIK. Each technique was applied over a set of 20 patients and their eye's optical quality for 4 and 6 mm pupil diameter was measured at the pre and post surgery stage (one day after the intervention), and 1 and 3 months after the surgery. Measurements were performed using a double-pass based clinical instrument (OQAS, Visiometrics, Spain). Only patients with a postoperative uncorrected visual acuity (UCVA) of 20/25 or better were included in the comparison.

**Results:** With the IOL procedure a noticeable worsening of the eye's optical quality is observed at the post surgery stage. However, 1 and 3 months after the surgery the optical quality parameters are very similar to those obtained at the pre surgery stage. With the LASIK technique, even though the worsening of the eye's optical quality at the post surgery stage is not so remarkable as with IOL, the patients remain with the same optical conditions, and do not present a complete recovery 1 or 3 months after the surgery. For eyes with similar pre surgery optical quality, IOL implantation provides a higher optical quality than LASIK, even in cases with wave-front guided treatments.

**Conclusions:** Even though both techniques are highly effective and predictable in order to correct mid-high myopia, they present different performances. Meanwhile the worsening of the results at the post surgery stage is more noticeable with the IOL technique than with LASIK, the whole recovery of the eye's optical quality with respect to the pre surgery stage is better when using the IOL technique. These results are in good agreement with theoretical predictions using customized modeling.

**Commercial Relationship:** **J.L. Guell**, Zeiss, Meditec, C; Visiometrics, P; **A. Padilla**, None; **M. Vilaseca**, None; **J.C. Ondategui**, None; **J. Pujol**, Visiometrics, P; **F. Díaz-Doutón**, None; **J. Gaytan**, None; **J. Tabernero**, None; **P. Artal**, Visiometrics, P; **M. Morral**, None.

**Support:** MEyC DPI2005-08999-C02-01; MEyC CIT02400-2005-024; MEC FIS 2004-2153; VISIOMETRICS

©2007, Copyright by the Association for Research in Vision and Ophthalmology, Inc., all rights reserved. Go to [www.iovs.org](http://www.iovs.org) to access the version of record. For permission to reproduce any abstract, contact the ARVO Office at [arvo@arvo.org](mailto:arvo@arvo.org).

OASIS - Online Abstract Submission and Invitation System™ ©1996-2008, Coe-Truman Technologies, Inc.