

Four-Year European Data on the Crystalens

Results from one of the original European investigators.

BY TOBIAS NEUHANN, MD

I have implanted 112 Crystalens IOLs (Eyeonics, Inc., Aliso Viejo, CA) during the last 4 years. This article briefly describes my results with this lens.

FOUR-YEAR RESULTS

I recently saw 36 patients (72 eyes) who had undergone bilateral implantation of the Crystalens for follow-up examination (shortest follow-up = 14 months, longest = 48 months). The data collected were quite interesting. If the patient's refraction were between +0.50 and -0.50 D, the amount of astigmatism did not exceed 0.75 D, and there were no ocular pathology, his UCVA was always 20/20 or better for distance, even after 4 years. That was an amazing finding! With the same distance refraction, four eyes could read J2, 18 eyes could read J3, and, with a mean near add of +1.50 D, all 18 eyes achieved J1+. Sixteen eyes could read J4 and, with a +1.75-D correction, achieved J1+. The remaining 28 eyes' near visual acuity was not better than J5 without correction. With a mean add of +1.75 D, they saw J1.

A real accommodative effect with shallowing of the anterior chamber could be measured neither with ultrasound nor with the new Scheimpflug camera from Oculus Optikgeräte GmbH (Wetzlar, Germany). The remaining six eyes had no ocular pathology but also no plano refraction due to the learning curve in biometry and my beginning surgical skill with this lens. With refraction, these eyes achieved between 20/25 and 20/20 UCVA. Two of the six eyes could read J1+ with a -2.50-D refraction.

None of the patients complained about halo or glare. Two eyes underwent YAG capsulotomies, which had essentially no effect on the patients' ability to see at near without spectacles.

Seven of the 36 patients were examined in March 2003 by

a US optometrist. The results at that time were much better than they were when I recently evaluated the patients. Both the optometrist and I asked most of these individuals to try reading without their glasses.

CONCLUSION

My hope when implanting the Crystalens that patients would be able to read easily with or without distance correction was not realized at the 4-year follow-up examination. I was unable to measure any active accommodative effect with ultrasound or Scheimpflug imaging. Pseudo-accommodation seems to have become important by means of a small pupil and/or a small amount of against-the-rule astigmatism.

I recognize that my results are far worse than those of the FDA trial. Perhaps the fault lies with my surgical technique. I am currently reviewing all of the steps of IOL power calculation, surgical intervention, implantation, and post-operative rehabilitation to find the answer to why "my" lenses have not functioned in the desired fashion.

Currently, I am not implanting the Crystalens. It is possible that my method for measuring accommodation is wrong, but I detected no real accommodation via shifting or movement of the lens. My overall impression is that the field is still in a learning phase about accommodating IOLs. ■

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