

COMPARISON OF REFRACTIVE AND VISUAL OUTCOMES OF THREE PRESBYOPIA-CORRECTING INTRAOCULAR LENSES

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Objectives

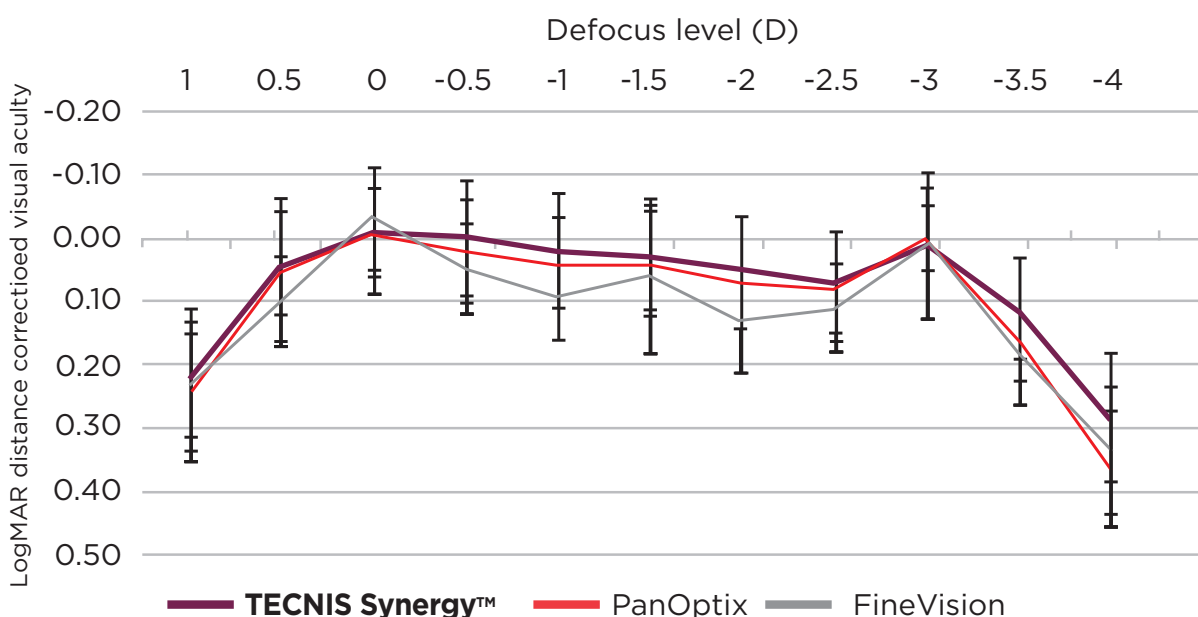
To evaluate and compare the clinical outcomes after cataract surgery with implantation of three different types of diffractive intraocular lenses (IOLs).

Study Design

This prospective comparative case series enrolled 180 eyes of 90 patients undergoing phacoemulsification cataract surgery with implantation of one of these IOLs were enrolled: **TECNIS Synergy™** IOL (Johnson & Johnson Vision) (30 patients), AcrySof PanOptix (Alcon) (30 patients), and FineVision (30 patients). The outcomes in terms of distance, intermediate and near visual acuity (VA), refraction, defocus curve, photic phenomena and spectacle independence were evaluated at 3-months follow-up.

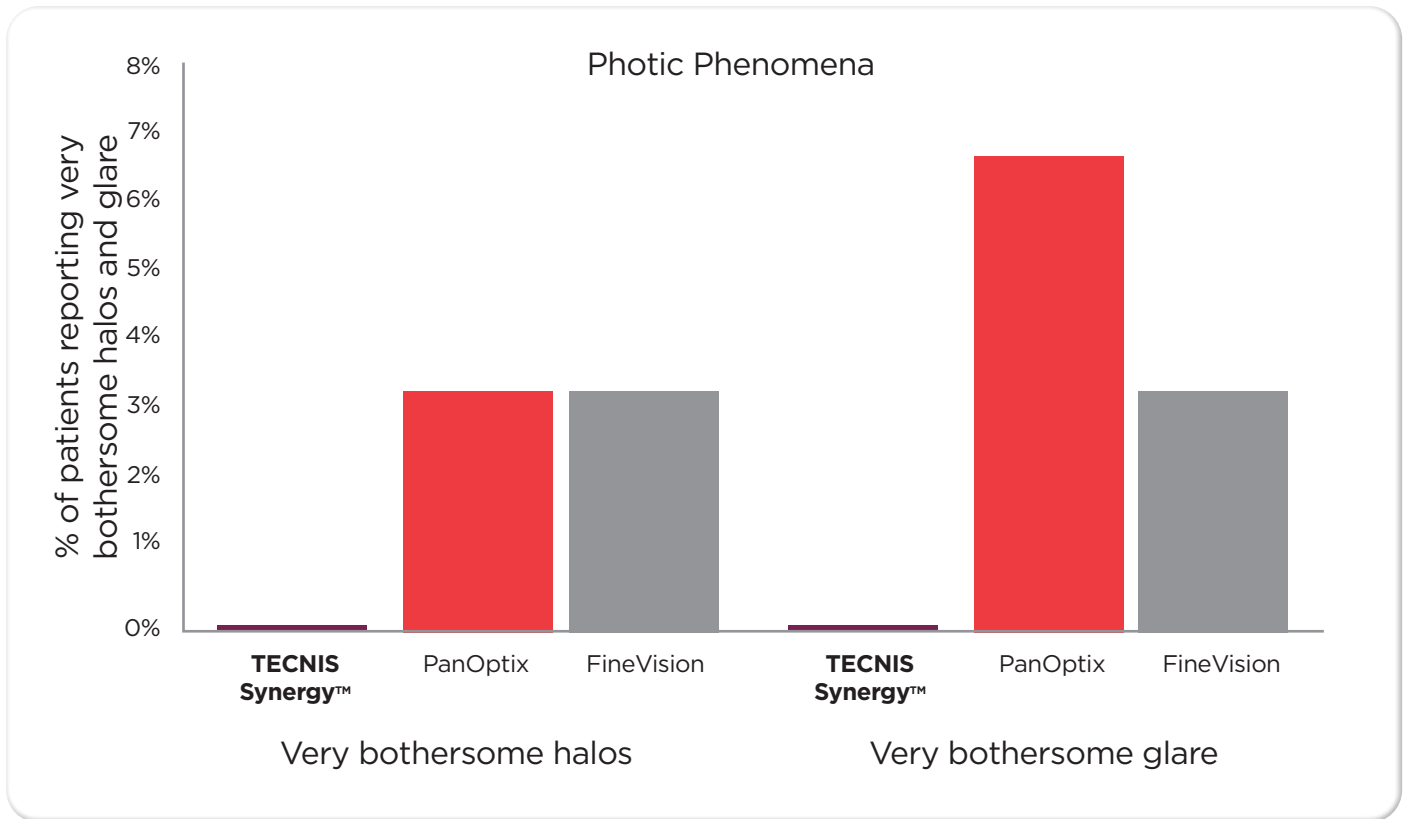
Defocus Curve and Visual Acuity Outcomes

The distance-corrected visual acuity was significantly better in the **TECNIS Synergy™** group compared to FineVision group for the defocus levels of +0.50 ($p=0.036$), -0.50 ($p=0.045$), -1.00 ($p=0.003$), -2.00 ($p=0.002$), and -3.50 D ($p=0.001$). Furthermore, the distance-corrected visual acuity was significantly better in the **TECNIS Synergy™** group compared to PanOptix group at the defocus levels of -3.50 ($p=0.014$) and -4.00 D ($p=0.004$). Regarding the intermediate visual outcomes, significantly better monocular postoperative UIVA was found in the **TECNIS Synergy™** group compared to the FineVision group (0.05 ± 0.09 vs. 0.09 ± 0.10 , $p=0.042$).



PHOTIC PHENOMENA

A total of 0.0% for **TECNIS Synergy™** but 3.3% of patients reported the perception of very bothersome halos in the PanOptix and FineVision groups, respectively. Similarly, the percentage of patients reporting the perception of very bothersome glare was 0.0% for **TECNIS Synergy™** but 6.6% and 3.3% in the PanOptix and FineVision groups, respectively.



CONCLUSIONS:

- The three IOLs evaluated provide an effective visual rehabilitation with minimal incidence of bothersome photic phenomena. A trend to obtain a wider range of functional focus was observed with the **TECNIS Synergy™** IOL
- A wider range of functional focus can be achieved with the **TECNIS Synergy™** IOL, with better distance-corrected visual acuities for close vergence demands compared to PanOptix and FineVision IOLs, and better UIVA compared to the FineVision trifocal IOL
- No significant differences between PanOptix, **TECNIS Synergy™** and FineVision IOLs in terms of spectacle independence

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