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IMPACT OF SEE-THROUGH VISUAL SIMULATOR SIMVIS GEKKO ON PREDICTION OF POSTOPERATIVE VISUAL PERFORMANCE

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One of the main challenges in cataract surgery with the current presbyopia correcting intraocular lens (IOL's) is predicting postoperative visual performance and to explaining to patients the pros and cons of diffractive multifocal or enhanced depth of focus (EDOF) IOL's.

SimVis Gekko is a see-through visual simulator with an optotunable lens working in temporal multiplexing mode that uses visual Strehl (VS) ratio for the optical evaluation of the temporal profile.

The tunable lens allows temporal multiplexing and generates fast periodic foci variations at speeds greater than the flicker fusion threshold of the human visual system allowing the patient to experience multifocality.

To assess the real-life impact of the SimVis Gekko on predicting postoperative visual performance, a prospective observational cohort study was designed and 34 patients (n=34) were enrolled.

Distance, intermediate and near visual acuities, the patient's subjective visual performance (on a scale of 0 to 10) and stereopsis were measured pre- and postoperatively. Different IOLs (trifocal and EDOF) were also simulated for each patient preoperatively to improve their ability to choose between them.

Visual simulation in patients with mild or transparent lens seems to be useful in the patient decision-making process and showed good correlation between preoperative measurements and post operative outcomes, including in the shape of the visual acuity curve for far, intermediate and near.