

ESCRS 2009: World Premiere for PresbyMAX®

Presbyopia software for the Schwind Amaris available

A new era in laser correction of presbyopia has begun: At the ESCRS in Barcelona, Schwind eye-tech-solutions announces to present a "groundbreaking and sophisticated software solution" for treatment of presbyopia with the Schwind Amaris. With PresbyMAX®, it is possible for the first time to treat emmetropic as well as myopic, hyperopic and astigmatic patients whose accommodative response is limited. In contrast to other methods so far applied for presbyopia treatment, Schwind says, PresbyMAX® delivers bi-astigmatic multifocal ablation profiles. With this new method, near vision of presbyopic patients even with additional visual defects (i.e. distance refraction and high-order aberrations) is significantly improved and sharp vision without spectacles becomes possible. The innovative software was developed by Schwind in cooperation with Vissum under the direction of Prof. Jorge Alió, Spain, and the Ocivis group from the University of Alicante. "The central development goal of the PresbyMAX® was to provide the first systematic and scientifically based approach for the correction of presbyopia with excimer laser surgery", says Prof. Alió.

Similar to the principle of multifocal contact lenses or refractive multifocal intraocular lenses,

PresbyMAX® creates a multifocal corneal surface. The bi-astigmatic multifocal ablation profiles were optimized by using a predictive model based on a light propagation algorithm.¹ The term "bi-astigmatic" refers to the astigmatic optimization

distances by actively participating in the visual process for creating binocular visual impressions. Laser treatment of additionally existing myopia, hyperopia or astigmatism can be efficiently combined with presbyopia corrections in only one

applied for treatment planning with the Schwind Amaris. Like all other Schwind CAM modules the PresbyMAX® allows to import diagnostic patient data including their graphical display. For treatment planning sphere, cylinder, axis, vertex dis-

shown that LASIK treatments with PresbyMAX® are suited for patients above 40 years old. The following patient characteristics are already proven to be effectively corrected with PresbyMAX®:

- Refractive treatments in early to moderate presbyopic patients (demanding an addition up to +2 D)
 - Refractive treatments in early to moderate myopic and presbyopic patients (with defocus up to -4 D; demanding an addition up to +2 D)
 - Refractive treatments in early to moderate hyperopic and presbyopic patients (with defocus up to +4 D; demanding an addition up to +2 D)
 - Refractive treatments in early to moderate astigmatic presbyopic patients (astigmatism up to +2 D; demanding an addition up to +2 D)
- Three months results of an international multicenter study with 134 eyes yield excellent outcomes with PresbyMAX® for myopic (44 eyes), hyperopic (44 eyes) and emmetropic patients (46 eyes). ■

J. Orfó, D. Ayo J., Maury C, Mas D, Saló E, Pérez J, Espinosa P. Optical analysis of PresbyLASIK treatment by a light propagation algorithm. *J Refract Surg.* 2007;23:39-44.

Information

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Cross section of the cornea

of the central corneal area for near vision and the midperipheral cornea for far vision for each patient eye. As PresbyMAX® optimally enlarges the depth of focus and minimizes contrast losses, patients obtain satisfactory vision for a wide distance range. In contrast to the monovision method, both eyes equally contribute to providing visual acuity at all

step. Moreover, Aberration-free, Corneal or Ocular Wavefront based treatments, in any treatment modality (e.g. LASIK or PRK), can be performed. PresbyMAX® is the only presbyopia software offering such a broad treatment spectrum for different indications.

PresbyMAX® is a module of the proven Schwind CAM software ap-

pliance, and addition as well as an adequate optical zone and the presurgical corneal thickness have to be considered. The Schwind Amaris laser ablates the combined ablation volume by means of the flying spot method without interruptions or unnecessary pauses. Unwanted aberrations are avoided by using aspheric profiles. Previous study results have