Vision Care Product News
October 2005

The Innovation Behind Renovation

Art Optical's GP multifocal comfortably improves the vision of presbyopes by addressing fitting problems related to spherical aberration, pupil diameter, and lens mass.

By Patricia Lamell, MEd, CO, COMT

FITTING contact lenses for presbyopes is sometimes frustrating. This is because the majority of gas permeable (GP) multifocals are designed to meet the needs of most presbyopic patients— those in the emerging and moderate presbyopic categories. To serve the needs of all multifocal patients, you have to provide quality vision and comfort for all presbyopes, even those with advanced presbyopia (adds higher than +2.00D). That's what Art Optical's Renovation™ GP multifocal lens is designed to do.

The Renovation Multifocal was designed with the mature presbyope in mind.

Spherical Aberration
The largest stumbling blocks to successful front-surface GP multifocal lens fitting fall into three categories: spherical aberration, pupil diameter, and lens mass. Art Optical identified those combinations that produced spherical aberrations by evaluating a myriad of lens power and base curve combinations. These spherical aberrations produce optical distortion as the eye transitions from the intermediate zone to the spherical add zone.

To manage this problem, Renovation uses ray-tracing software in the power calculation process. This innovative technology automatically adjusts the front surface eccentricity value of the distance and intermediate zones, correcting for aberrations, and effectively eliminating spherical aberration in the transition to the add zone, thus allowing a smoother transition and easier access to the near power.

Pupil Diameter
Renovation employs a large distance and intermediate zone in its standard design. The combined distance/intermediate zone has a total diameter of 7.9mm, with the near zone in the periphery. According to Art Optical, this provides exceptional acuity for most patients. A smaller 7.0mm distance/intermediate zone is available for those with smaller pupils to aid in accessing the near zone. For patients with larger pupils who may experience flare and glare, a larger distance/intermediate zone of 8.5mm can be specified.

Lens Mass
Art Optical addressed the issue of increased lens thickness associated with most front-surface multifocal lens designs by using proprietary design software to evaluate and reduce lens mass in all distance and near power combinations, including higher add powers. This results in added comfort and improved lens centration.

Availability
Renovation is recommended for use with Polymer Technology's Boston ES® GP lens material, although the lens can be made from any material that Art Optical offers. Dis-tance powers range from -20.00D to +20.00D with add powers from +1.00D to +3.50D. Base curves run the gamut from 6.90mm to 8.50mm with diameters ranging from 9.0mm to 10.0mm. The standard distance/intermediate zone is 7.90mm total with 7.0mm and 8.5mm available on request.

Art Optical's Renovation multifocal promises to give all presbyopic patients, even those with advanced presbyopia and other fitting challenges, good vision and comfort. It's the type of GP multifocal contact lens many eyecare professionals have been waiting for.

THE HIGH ADD DILEMMA

For a front-surface multifocal contact lens to deliver good vision at all distances, the full range of power must be accessible to the patient. This requires adequate centration for good distance vision and slight upward translation to allow access to the near power. As patients age and their add requirements increase, there is more difficulty in maintaining stable optics through a greater range of power combinations.

Most multifocal presbyopic lens designs, front or back surface, fall short of providing adequate near power for patients with adds of +2.00D and greater. Renovation™ is designed to address this problem, allowing mature presbyopic patients to continue wearing and enjoying contact lenses throughout their lifetime.

Patricia Lamell is an ophthalmic technologist and educator in Jacksonville, FL.