ASPHERICx™

Aberration Controlled for better vision

The average cataract patient today is far more active than ever before, demands better performance from his/her body and requires better visual acuity. Increasing the body's performance levels means greater demands on every bodily function including corrected vision after Refractive or Cataract surgery.

Physical Changes

As we age, the physical properties of the organs which provide vision and visual acuity change. During our early twenties our eyesight is the best offering us better acuity, better contrast sensitivity and the fewest spherical aberrations we will experience. The human visual system includes the natural cornea, the natural crystalline lens and the fovea, located on the retina. Since the retina is only a receptor for the visual signal that transfers that signal, through the optic nerve to the brain, it cannot change the amount of positive or negative aberrations added when light travels through the lenses of the eye.

We were created with an exterior lens, the cornea, which generally offers positive spherical aberrations and an interior lens, the natural crystalline lens that generally creates negative spherical aberrations. When a patient has cataract surgery a perfect "Zero Aberration" lens is normally implanted.

In the past, patients were older, with cataracts only removed and an IOL implanted after the patient was nearly blind. Therefore,most patients didn't notice the difference in the increase of aberrations. They were just happy to see again

Today, patients are younger and notice that at dawn, or at dusk, things, "Just aren't as clear." This is due to reduced light levels, reduced because the new lens does not compensate for the positive aberrations delivered through the cornea

How it Works

ASPHERICx™ was developed using advanced optical physics to supply the vision requirements of the patient.

Numerous studies[(1)] indicate that by reducing the amount of aberrations in the light waves going through the eye, more rays are focused on the retina.

This translated into better distant vision and better low light vision as illustrated in the photos above

20 Years of Age

The natural lens compensates for the positive aberration of the cornea.

Standard IOL

The normal IOL is very forgiving but a little more, dim than the aberration controlled lens.

ASPHERICx™

ASPHERICx™ positions more of the available light on the fovea allowing the patient to see objects more distinctly.

Compressing the light into a smaller zone means a greater need for an IOL with an advanced ergonomic design.

Lens Positioning System

A standard IOL can move, tilt or even slightly de-center without loss of visual acuity. But when the rays of light are concentrated into a smaller area it means that movement of the lens must be reduced in order to maintain visual perception.

ASPHERICx™ has been designed to maintain stability and centration in the bag for the life of the patient. The optical framework IMT has chosen has been used, successfully, for nearly 10 years around the world.

Norbert Korber, MD, Ambulatory Operating Center Porz, Cologne, Germany presented a study at the ESCRS documenting the superior bio-compatibility and centration features of the lens.

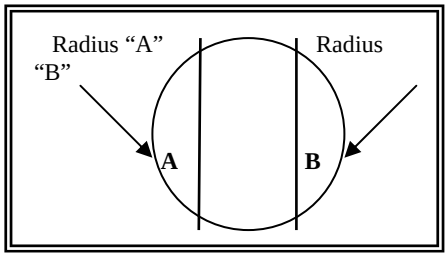
Even when the capsular bag contracts and shrinks the lens design carefully maintains capsular formation thereby reducing excess capsular folds and focal zonular dehiscence.

Intricate Design

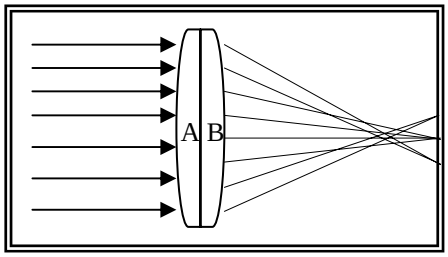
Engineers have selected its patent pending IOL, the HP60PUV, to carry the new optical system.

Designed with a 6.0mm optic and four cleverly designed footplates located at 2, 4, 8 and 10 O'clock their shape prevents them from bending and "Dog Earing," the lens. In addition, the lens always centers itself and vaults to the back of the back immediately after implantation.

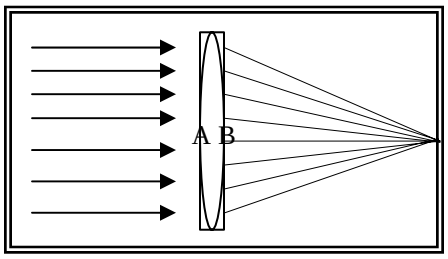
As mentioned earlier, the dynamic design of the haptics also control the shape of the capsular bag during the normal shrinking process. Many lenses tend to move when the bag begins to shrink.



The standard IOL is cut with a perfect radius on each side. Below, Radius "A" and "B" are combined to form the IOL.



The light rays from the equi-convex lens creates multiple focal zones. If the lens tilts or decenters slightly visual acuity is not lost.



Light rays of the aberration controlled lens focus in far fewer zones meaning more light.

What happens if it moves?

We saw earlier that the natural Cornea creates mostly positive aberrations. Knowing this, some companies are now building IOLs with a ultra high degree of negative aberration in order to compensate for the Cornea. These lenses even focus more of the light, into a much smaller area, meaning that any shifting of the optic can create real problems for the post-op patient.

ASPHERICx has been designed as a Bi-Convex system that uses the structure of the polymer and shape to reduce the aberrations reaching the fovea. Therefore, the patient is not in danger of loosing good visual acuity even if it were to move slightly following any unforeseen accident or mishap

Implantation

ASPHERICx™ is intended for use only by qualified surgeons after removal of the natural crystalline lens thru phacoemulsification. It should not be used in patients with weak zonules, those who are at risk for a dehisced capsule, patients with a ruptured capsule or with a dislocated capsular bag.

The lens may be injected through a 2.0mm to a 2.5mm cartridge or folded and inserted depending on the surgeon's preference.

CE 0086 – ISO 13485

ASPHERICx™

OPTIC: 6.0mm, 360⁰ Square Edge

LENGTH: 11.0mm & 12.5mm Custom)

HAPTIC: PLATE

DIOPTERS: 10.0 D – 40.0 D

(0.5 D Increments 15.0D to 30.0D)

FORMULATION: Progressive

METHOD: Refractive Bi-Convex

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