



# PRECIZON™

Aspheric Presbyopic IOLs



*Special:*  
**Patient Selection  
& Counseling**





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## **PRESBYOPIA CORRECTION REINVENTED**

### **The PRECIZON™ Aspheric Presbyopic IOLs Another milestone in presbyopia correction**

Your expertise, recommendations and experience help cataract patients to decide on the best lens model for their personal vision objectives. This special provides you with information on how to select a patient for presbyopic IOLs, balancing your patient's expectations and understanding the essential diagnostics.

## Personality and Vision Objectives

- It is well established and widely acknowledged that the main criterion for selecting a suitable multifocal patient is his/her willingness to be free from glasses. If your patient does not request independence from glasses and does not mind wearing them, this patient is not suitable for this type of IOL implant. Refractive patients are more likely to notice the photic side effects of multifocal IOLs than regular cataract patients<sup>4,5</sup>. Patients that have had previous refractive surgery frequently show additional loss of contrast with a reduction in visual quality<sup>6</sup>.
- The person's dynamics and his/her personality are factors to consider. For instance, a patient who is extremely critical and has very high expectations presents a source of concern. Positive, easy-going patients who understand that a surgical procedure involves risks and are willing to accept compromises on visual acuity in exchange for freedom from glasses, are the ideal candidates.
- Take the patient's lifestyle into consideration. Are glasses causing inconvenience during activities? For example when swimming, golfing, or switching from reading glasses to no glasses during meetings or presentations. And how important is the visual quality in low light conditions to your patient? There are occupations that make multifocals inadvisable- pilots, drivers, astronomers and anyone whose job requires activity at night or low-light conditions<sup>3</sup>.

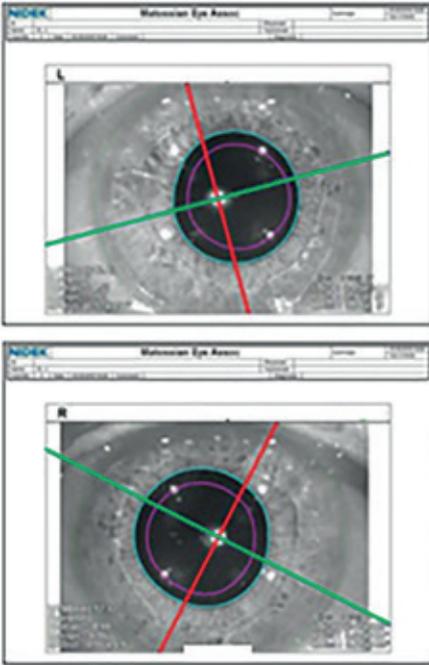


# Pre-op measurements

**Which diagnostics should be performed?**

These days there are several different types of equipment that help us to achieve accurate pre-operative diagnostics<sup>71</sup>.

- **Dry-eye and meibomian gland dysfunction should be treated pre-operatively. If present, assess if the dry eye may be impacting the topography.**
  - ✓ If there is impact, treat the dry eye first and take a new measurement afterwards.
  - ✓ If there is no impact on the topography, you can inform the patient of the dry eye and start the treatment.
- **Refractive errors after MIOL implantation are a major source of retreatment. In terms of biometry, optical measurements of axial length are usually accurate and better than ultrasound. Ensure good K reading of the patient's eye. Consider 4<sup>th</sup> generation formulas for the calculation of the dioptric power.**
- **Assess the cornea; make sure that the patient does not have a significant corneal cylinder (>1.0 D), depending on the steep axis. The visual acuity at all distances decreases in proportion to the diopters of astigmatism.**
- **It is important to assess 3<sup>rd</sup> and 4<sup>th</sup> order corneal aberrations such as coma as well. Anterior corneal coma values greater than 0.32  $\mu\text{m}$  may result in intolerable dysphotopsia in the presence of a diffractive optics multifocal IOL<sup>171</sup>.**
- **Confirming the normal functionality of the macula and its anatomy is crucial. A test with an optical coherent tomographer (OCT) is advised.**
- **Other important factors that may influence the final outcome are angle kappa and pupil size<sup>8,91</sup>. Centration of the mIOL is critical to achieving maximum optical performance<sup>101</sup>. Patients with decentred implants may experience glare, halos and a decline of visual acuity. Angle kappa is the distance between the pupil centre and the visual axis. When the optics of the implant and the optics of the eye align, good outcomes and happy patients are much more likely. A lens can be perfectly centred within the pupil, but the visual axis may not be exactly in the centre of the pupil. The presurgical evaluation of angle kappa helps to identify patients who may not be ideal candidates for a mIOL.**



- With the enlarged central zone that can go up to 2.6 mm for far vision, the Precizon Presbyopic NVA model is the best option for a large angle of kappa, compared to other presbyopic IOLs with smaller central zones. Patients with large pupils will be more likely to suffer from glare. The pupil size should not exceed the IOL body diameter of 6.0mm. Patients with small pupils (hence 2.2mm) will benefit less from the segments in the Precizon Presbyopic IOL for far and near, as their vision will be limited to the central area of the IOL.
- Finally, rule out ocular diseases that may predispose future complications (e.g. anterior segment pathology, glaucoma, corneal dystrophy, ocular inflammation, pseudoexfoliation syndrome, retinal disorders).



# Precizon Presbyopic IOL patient selection | Success checklist

## Personality

- ✓ Would accept a small compromise in visual acuity in exchange for vision at all distances
- ✓ Willing to understand that it is a procedure without guaranteed outcome.

## Diagnostics

- ✓ Within the available IOL diopter range: +1.0 D to +35.0 D
- ✓ 1.0 D or less of corneal astigmatism<sup>1)</sup>
- ✓ Healthy retina
- ✓ No corneal pathologies

## Avoid patients with:

- ✓ No desire to get rid of glasses
- ✓ An extremely critical attitude
- ✓ Dry eyes and meibomian gland dysfunction
- ✓ Astigmatism greater than 1.0 D
- ✓ Jobs that require activity at night or low-light conditions
- ✓ Low myopic patients may be difficult to satisfy as they have excellent uncorrected near vision
- ✓ High degree of spherical and higher order aberrations.



# Spending chair time with your presbyopic cataract patient

In general, the most critical success factor for mIOLs is balancing your patient's expectations. Naturally, patients compare their post-operative uncorrected visual function with their pre-operative state. There is no best way to counsel patients however. Cultural and organizational differences have a large impact on choosing the best approach. We interviewed several specialists from different countries, resulting in a summary of nine steps that may help during the conversations with your patients.

## 1. First the most important step is figuring out the patient's objectives as regards to their vision

If your patient does not request independence from glasses and does not mind wearing them, then this patient should not be considered for a Presbyopic IOL implant. The patient will benefit more from other options, such as the Precizon Monofocal IOL.

## 2. Next it can be helpful to remind your patient of his or her age

Changes are taking place in the body in general, not just in the eyes. Explain that their vision after cataract surgery will not be like before. An IOL is not as perfect as the patient's natural crystalline lens at the age of 18.

## 3. Then communicate the necessity to choose

The choice is either sharp vision in far distance, whilst using glasses for intermediate and near vision or full vision from near to infinity with less dependence on glasses but possible slight visual disturbances in low light conditions.

## 4. Explain the surgical risks

Warning each patient of the inherent risks of surgery is an important part of the informed consent process.

Once you've determined your patient is a candidate for the Precizon Presbyopia IOL, balancing expectations is all about comparing what life will be like when the patient chooses a presbyopia correcting IOL implant for surgery with life after a standard monofocal implant.

## 5. Advise the patient on what his or her visual function will be when he or she chooses a conventional monofocal IOL

Educate your patient about vision at one specific distance and lack of focus on close objects with a monofocal IOL. Help patients understand that this is what things will be like if they do not choose a presbyopia-correcting IOL.

*People perform many near-distance tasks besides reading and working at a computer, such as looking at their smartphone, reading traffic signs and going shopping. With standard cataract surgery with a conventional lens you will see well in the distance without glasses, but you will need spectacles for all 'near' and 'in-between' visual tasks.*



## **6. Next describe the difference between standard monofocal lenses and this premium presbyopia-correcting lens with Continuous Transitional Focus (CTF) technology**

*If you go with a standard monofocal lens, you will be reaching for glasses every time you perform one of the tasks mentioned before. If you go with a premium presbyopic lens, you are less dependent on glasses. You are more likely to see well at near or in-between distances.*

## **7. Inform the patient of the potential of slight visual disturbances with presbyopic-correcting lenses<sup>1</sup>**

It is acceptable for patients to be told they may experience post-operative glare or halos<sup>2</sup>. Most patients experienced pre-operative halos and glare from the cataracts. People may also experience challenges in adapting to the new technology. Over time, many people grow accustomed to these disturbances and stop noticing them, but that isn't always the case.

*After getting a presbyopic-correcting premium lens implanted, you may experience some visual disturbances. The IOL is not exactly like the natural human lens. The brain requires a period of adjustment to form some new wiring that can digest the information from multifocality. You may still experience halos and glare, for example while driving at night. This will subside considerably over a 6-month adaption period<sup>3</sup>.*

## **8. What to answer if a patient asks 'What is the biggest risk?'**

'You may not be happy in some way with your vision with the premium presbyopic lens in place. If the vision is disturbing you to a great extent, then the procedure can potentially be reversed. The premium presbyopic IOL can be removed and a standard lens can be put in its place. Fortunately this is a rare event.'

## **9. Remind patients of the activities they can enjoy with their reduced reliance on glasses**

Include any work activities, sports, hobbies and outdoor activities you know your patient enjoys.



## Specifications

The Precizon IOL Family offers you the opportunity to choose the best model for your patients. When you treat cataract patients with presbyopia, you can choose between the Precizon Presbyopic model and the Precizon Presbyopic NVA model. Both models make use of the CTF technology. The main differences remain in the segment sizes, light distribution for far and near, and in the IOL aberrations.

### Presbyopic Model

Cataract patients for whom an excellent depth of field is critical are better suited to a neutral aberration optic<sup>3)</sup>.

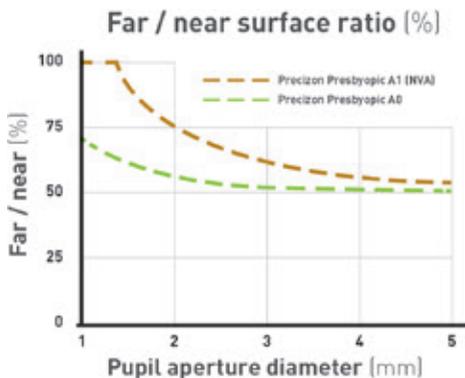
Furthermore, some cataract patients have neutral or negative aberrations in the cornea. In these cases aspherical neutral aberration optics are a better fit, as this will avoid overcompensation providing a better vision.

Finally, cataract patients who appreciate equal light distribution but have decentred pupils, may also benefit from the 50/50 far/near light distribution and pupil independence of the Precizon Presbyopic model.

PHYSICAL CHARACTERISTICS	PRECIZON PRESBYOPIC
Model	570 A0 Precizon Presbyopic One piece IOL
Optic type	<b>Aberration neutral</b> Continuous Transitional Focus (CTF) optic
Central far zone size Y/X	0.5 / 2.0 mm
First near segment direction (in / out)	inwards
Rotated segments width	0.75 mm
Number of segment rings	3 n
Abbe number	47
Optic powers	+1.0 D to +35.0 D (0.5 D increments) Power add +2.75 D.
Haptic configuration	Open modified C-loops with offset shaped haptics
Lens material	<b>Hybrid</b> hydrophobic & hydrophilic monomers. Ultraviolet filtering HEMA/EOEMA Copolymer
Lens colour	Clear
Body Ø	6.0 mm
Overall Ø	12.5 mm
Haptic angle	0°
A-constant* Ultrasound	118.0
A-constant* Optical	118.6 (SRK T)   118.7 (SRK III)   0.567 (Haigis a0) 0.123 (Haigis a1)   0.159 (Haigis a2) 5.27 (Hoffer-Q pACD)   1.53 (Holladay 1 sf) 1.67 (Barrett suite LF)   0.0 (Barrett suite DF)

\* Check [www.ophtec.com](http://www.ophtec.com) for up to date A-constants

Precizon Presbyopic • Key benefits • Patients
Critical near & intermediate vision
50/50 far/near light distribution
Neutral, positive or slightly negative corneal aberrations
Older cataract patients / reading, computer work



## Presbyopic NVA Model

The average human cornea has positive aberrations and you may want to compensate for these with a negative aberration lens like the Natural Visual Acuity (NVA) model. Prior myopic LASIK patients will also benefit from aspherical negative aberration optics<sup>31</sup>.

Furthermore, patients without prior corneal refractive surgery who value image quality may also be better off with a negative aberration lens.

Finally, the Precizon Presbyopic NVA is designed to give cataract patients excellent far vision. They benefit from the 60/40 far/near light distribution as the central zone of the lens is enlarged and can go up to a 2.6 mm zone for far vision.

PHYSICAL CHARACTERISTICS	PRECIZON PRESBYOPIC NVA
Model	570 A1 Precizon Presbyopic NVA One piece IOL
Optic type	<b>Aberration Negative (- 0.11 µm)</b> Continuous Transitional Focus (CTF) optic
Central far zone size Y/X	1.4 / 2.6 mm
First near segment direction (in / out)	outwards
Rotated segments width	0.60 mm
Number of segment rings	3 n
Abbe number	47
Optic powers	+1.0 D to + 35.0 D (0.5 D increments) Power add +2.75 D.
Haptic configuration	Open modified C-loops with offset shaped haptics
Lens material	<b>Hybrid</b> hydrophobic & hydrophilic monomers. Ultraviolet filtering HEMA/EOEMA Copolymer
Lens colour	Clear
Body Ø	6.0 mm
Overall Ø	12.5 mm
Haptic angle	0°
A-constant* Ultrasound	118.0
A-constant* Optical	118.6 (SRK T)   118.7 (SRK II)   0.567 (Haigis a0) 0.123 (Haigis a1)   0.159 (Haigis a2) 5.27 (Hoffer-Q pACD)   1.53 (Holladay 1 sf) 1.67 (Barrett suite LF)   0.0 (Barrett suite DF)

Precizon Presbyopic NVA • Key benefits • Patients
Excellent quality image & far vision
60/40 far/near light distribution
Positive corneal aberrations
Younger cataract patients / Active lifestyle

\* Check [www.ophtec.com](http://www.ophtec.com) for up to date A-constants



## What makes this lens unique?

- **CTF (Continuous Transitional Focus) optic**

**A CTF optic is an optic with an anterior surface with multiple segments for far and near. A smooth transition from far to near is achieved between the segments. This platform offers a constant defocus between the two sharp focal points, delivering excellent intermediate vision.**

The entire anterior and posterior lens surfaces are shaped by computer-guided patent-pending Transitional Conic technology. This technology has the capability of producing an aberration-neutral aspheric IOL with a plus power of 2.75 D or an aspheric negative aberration lens of - 0.11  $\mu\text{m}$  depending on the patient's needs.

Regular Multifocal IOLs may cause positive dysphotopsia due to concentric rings<sup>15</sup>. However, CTF uses segments that avoid such a problem as they are designed to provide lenses more tolerant to halos and glare.

Saving chair time can be advantageous as CTF lenses provide a more natural experience for patients while minimizing unwanted optical side effects<sup>2</sup>. With good quality vision from 40 cm to infinity and a balanced contrast sensitivity, patients are likely to be satisfied with the CTF optics.

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# PRECIZON™

Family Aspherical IOLs



PRECIZON  
Aspheric Monofocal IOL



PRECIZON  
Aspheric Toric IOL



PRECIZON  
Aspheric Presbyopic IOL



PRECIZON NVA  
Aspheric Presbyopic IOL

