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Managing the unhappy patients





No financial
disclosures



RIO CAIRO 2025

- *Finding the reason of dissatisfaction and knowing how to fix it can turn an upset patient into a happy one*



Ocular
Comorbidity

binocular
vision
disturbance

other eye

Astigmatism



Pre op
consideration

Ocular
pathology

What makes a
patient unhappy

Disphotopsias



High
expectations

Multifocal IOL related problems / Dysphotopsia

Pseudophakic Photic Phenomena

- **Unwanted** optical images
- **High-contrast** conditions
 - *light over a dark background ie night driving*
- Disabling/Non-disabling

Source: Dr Kramer et al.'s Halo & Glare Simulator. www.mediawebtool.com

NORMAL



NON-
DISABLING



DISABLING



Types

- Positive: glare, haloes, starbursts, etc.
- Negative: shadows

NEGATIVE



POSITIVE

Normal



Starburst



Glare



Haloes



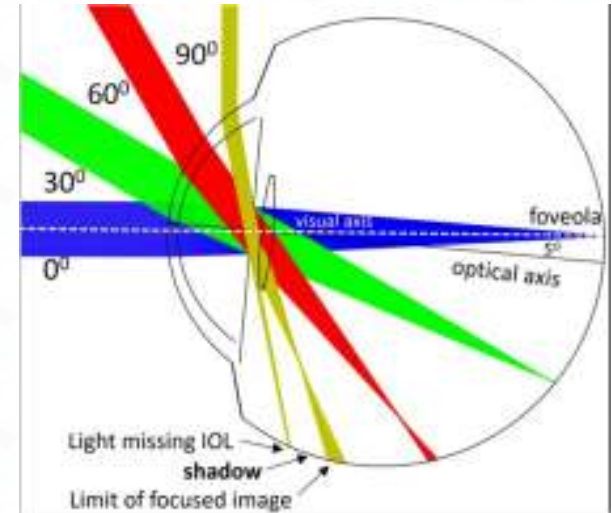
Negative dysphotopsia

- Shadow temporal of the visual field
- Squared edge design IOL
- The **space between the pupil and the IOL**
- Small temporal displaced pupils

NEGATIVE



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Reference: Simpson, M. Comment on: Distinct differences in anterior chamber configuration and peripheral aberrations in negative dysphotopsia. J Cataract Refract Surg 2021; 47(1):

- The optical consequences for the eye
- Glaucoma, cataracts, and refractive error
- Glaucoma, cataracts, and refractive error

¹Puell, MC et al. Normal values for
29(9):618-22



NO FREE LUNCH IN OPTICS

Binkhorst Lecture focuses on compromises and challenges in optics. Dermot McGrath reports from the 39th Congress of the ESCRS in Amsterdam.



Dermot McGrath

Posted: Wednesday, December 1, 2021

Binkhorst Lecture focuses on compromises and challenges in optics. Dermot McGrath reports from the 39th Congress of the ESCRS in Amsterdam.

Every intraocular lens designed to correct presbyopia, irrespective of its design properties and material, involves a trade-off in visual performance once implanted in the eye, said Gerd Auffarth MD, FEBO, during the annual Binkhorst Medal Lecture.

In a wide-ranging lecture focused on the inherent compromises in multifocal and presbyopic-correcting IOLs, Professor Auffarth stressed the importance of neuroadaptation and brain function in the performance of any implanted lens, adding it was important to appreciate how intraocular lenses perform under real-life conditions once inside the eye.

Clinically Relevant Optical Bifocal, Trifocal, and Extended Focus Intraocular Lenses

Combin Control, M7, RHO, Intraocular Lens, RHO

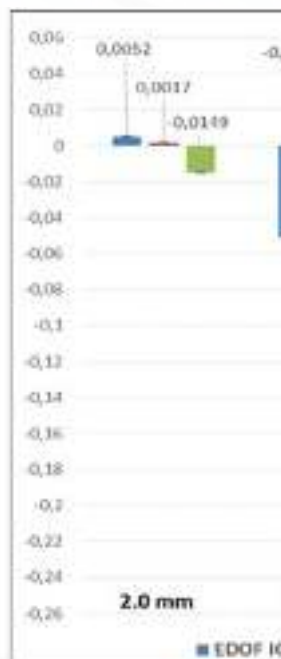
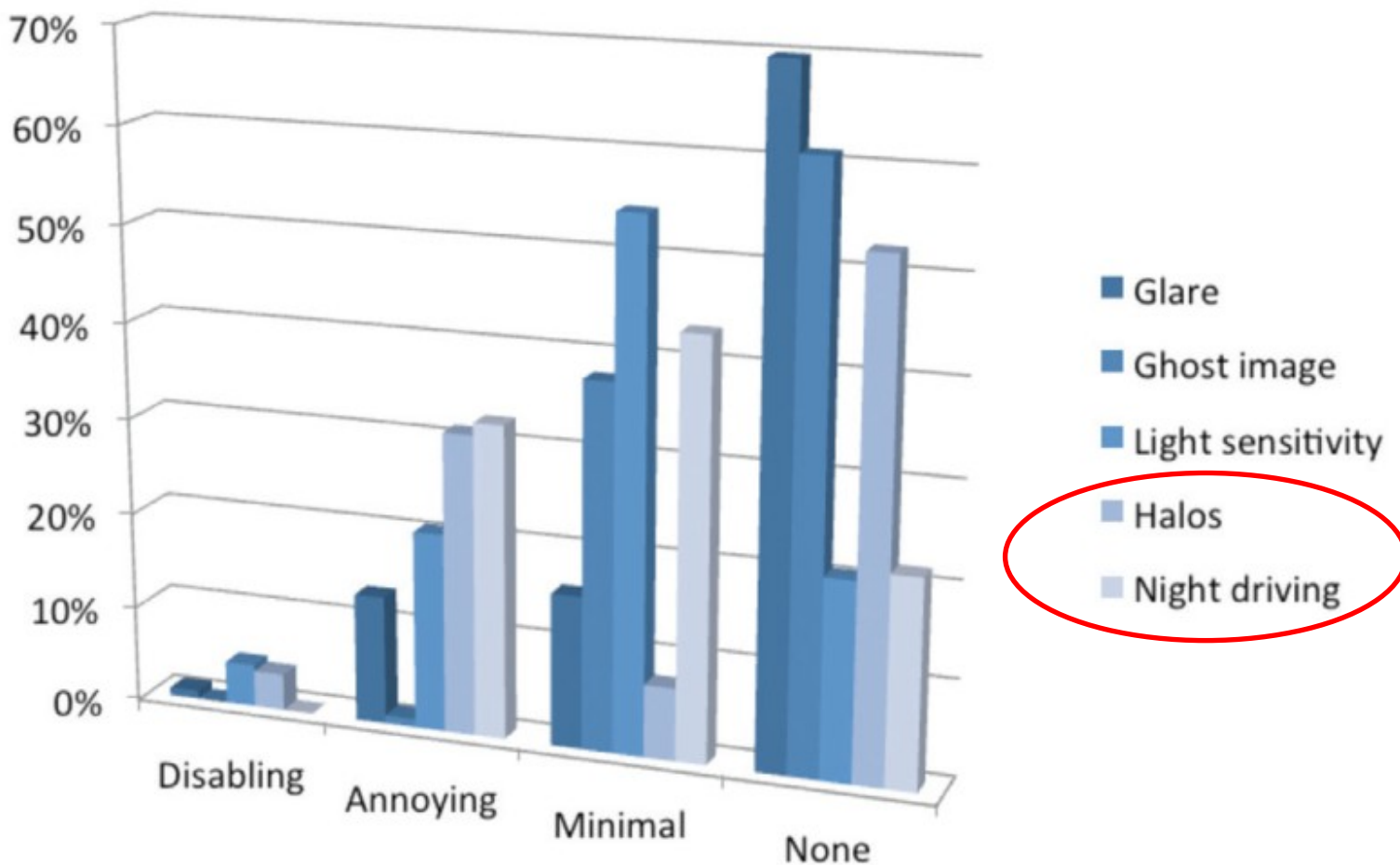
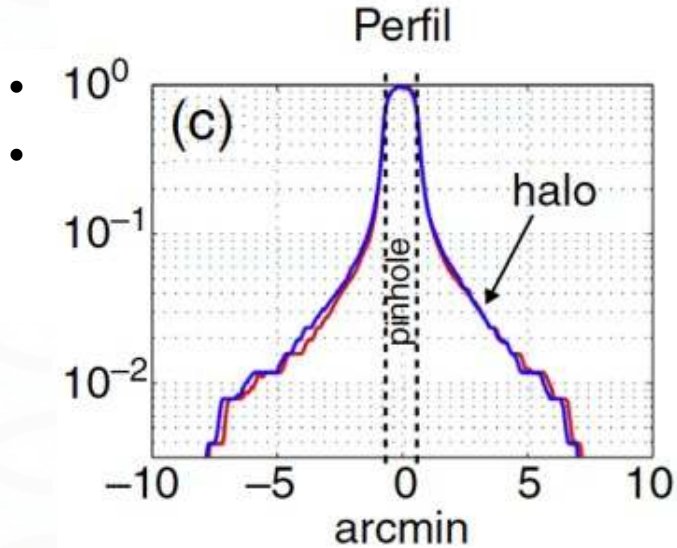


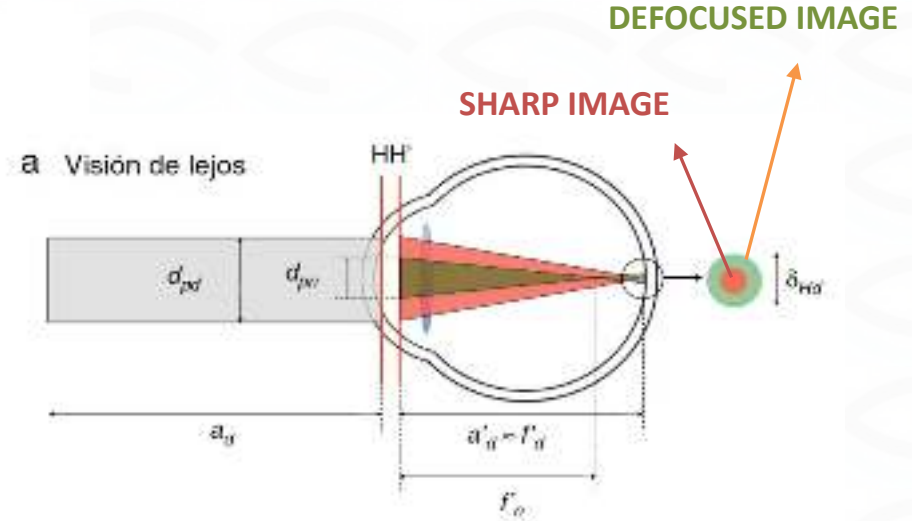
Figure 1. Spherical aberrations for the extended intraocular lenses (IOLs).



Simultaneous Vision

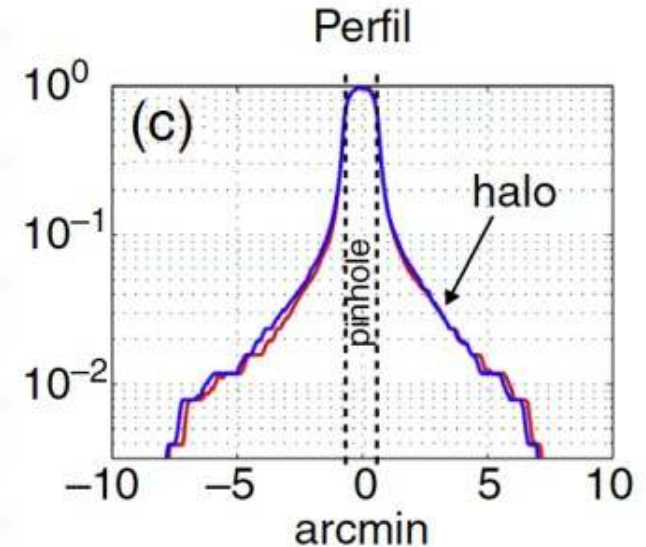
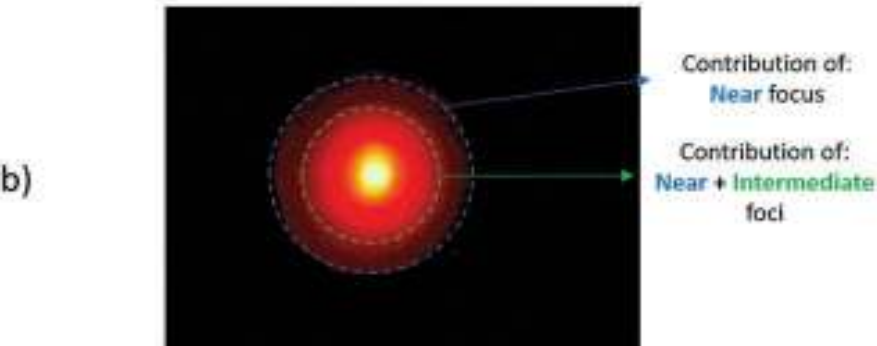
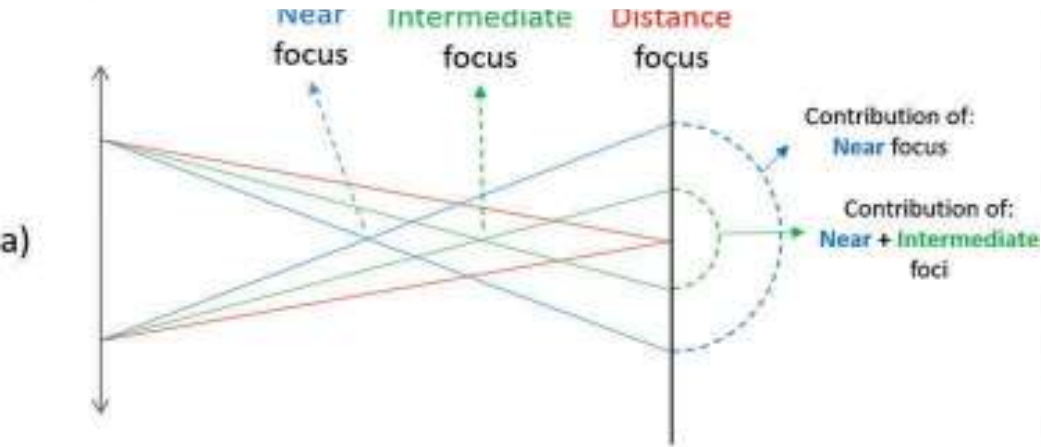


ges
focused

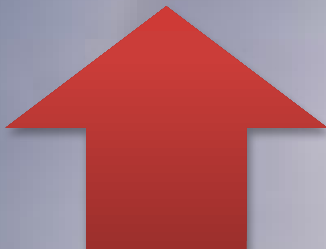


- Daylight $\rightarrow$ **Background is illuminated** $\rightarrow$ *low contrast* $\rightarrow$ Defocused image **Supressed**
- Dim light $\rightarrow$ **Background is dark** $\rightarrow$ *high contrast* $\rightarrow$ Defocused image **appears**

Trifocal always induce halos



HALO SIZE



Additional power
Pupil size



IOL Power

Halo size under distance and near conditions in refractive multifocal intraocular lenses

Serfin Polo, Brigit Lockhart, Georg Hainelmann, Richard Zilber, Markus Staben, Herbert Wegmann, Aditi Deydas, Christian Stoppel

$$\delta_{Hd} = dpn \frac{\Delta P}{P_d}$$

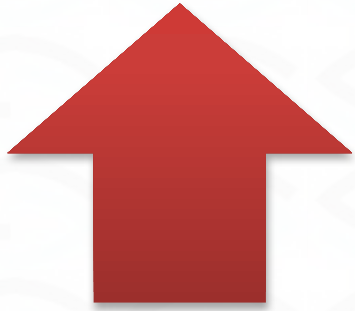
ΔP = Addition power

P_d = IOL power (Distance)

δ_{Hd} = Halo diameter

d_{pn} = Near zone diameter

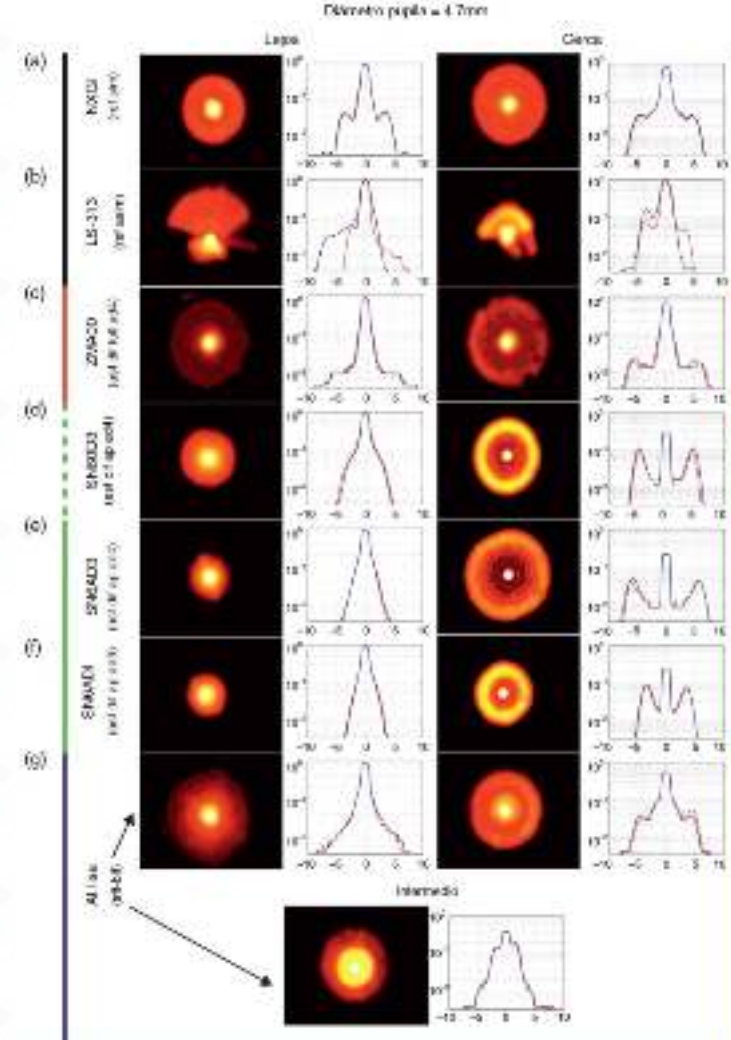
HALO INTENSITY

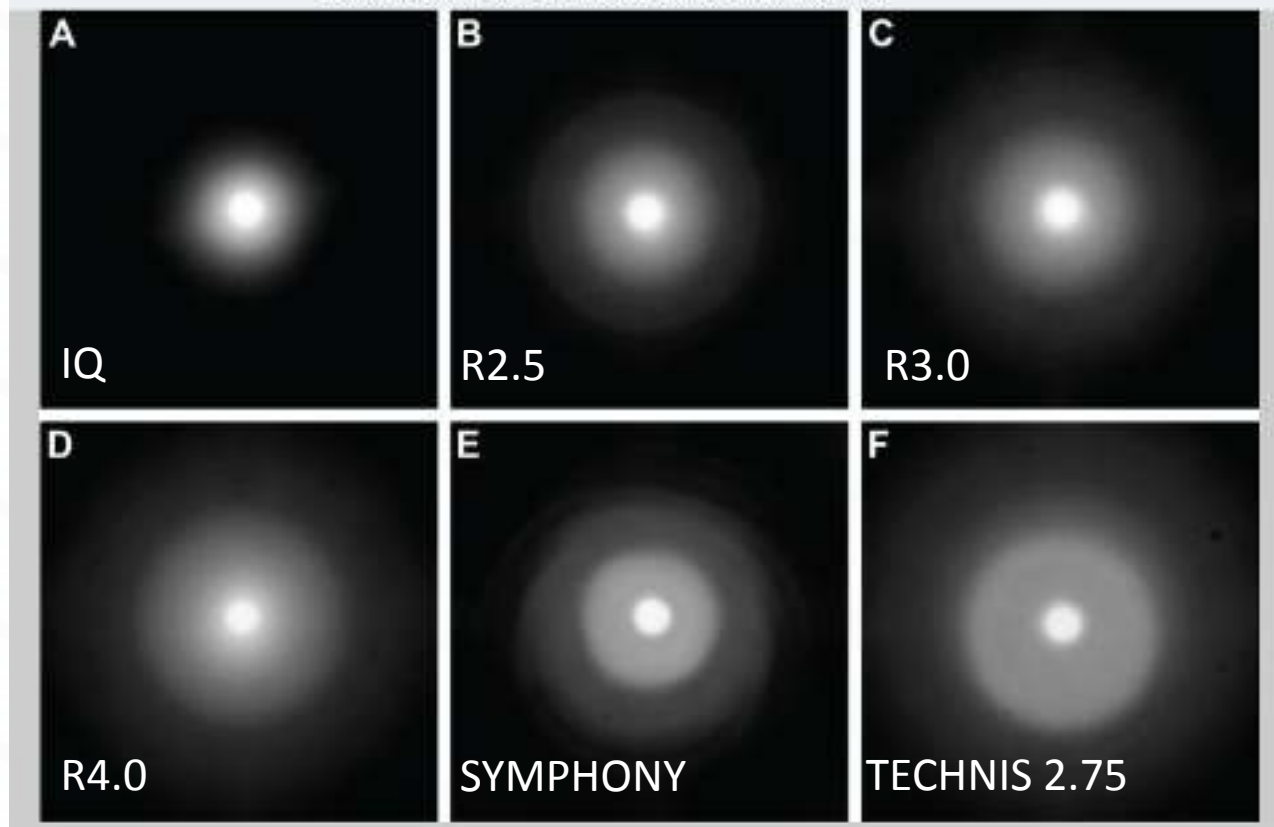


Spherical IOL
Apodized (near)
Bifocals



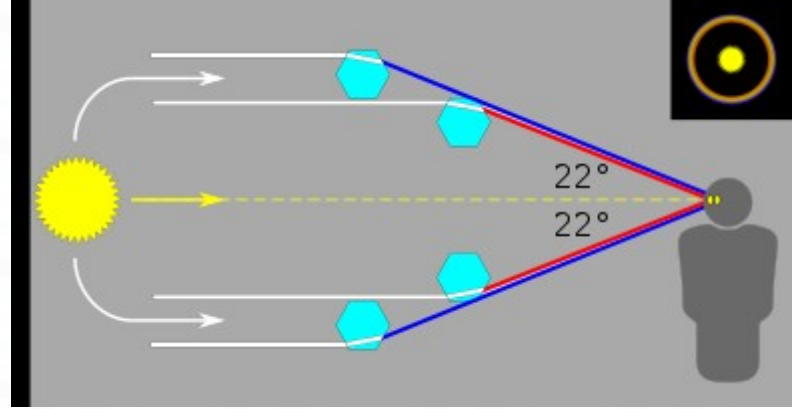
Apodized (for far)





Halos with simultaneous Vision

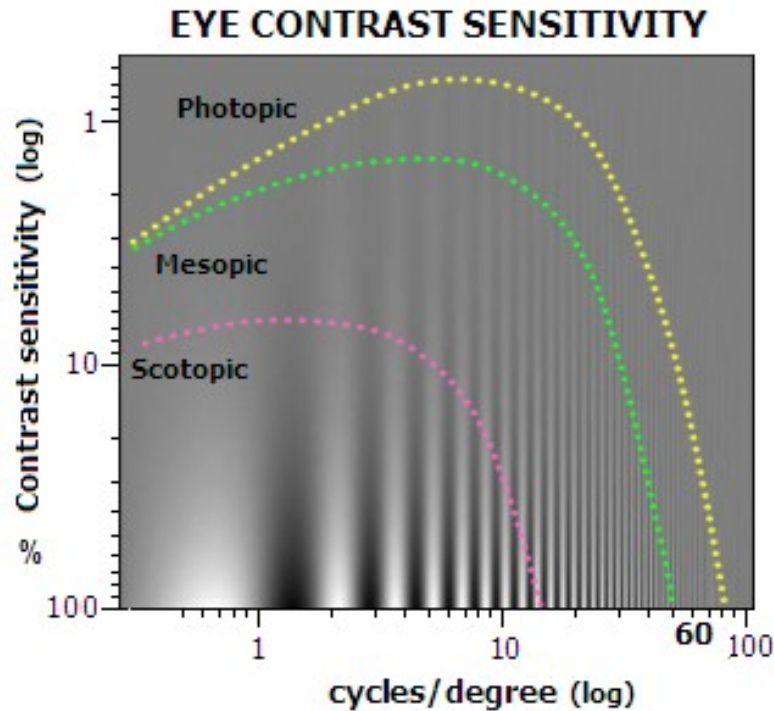
- **Spherical** IOLs  than Aspheric IOLs
- Apodized IOLs  than **non-apodized** IOLs (at Far)
- Apodized IOLs  than non-apodized IOLs (at Near)
- Trifocal IOLs produce **2 different haloes**



-
- Alba-Bueno, F et al. Halos y lentes intraoculares multifocales: Origen e interpretación. Arch Soc Esp Oftalmol (2014). 89(10):397-404
-

- The more light energy at the NEAR focus, the more CONTRASTED vision at NEAR, but also the more HALO INTENSITY at FAR

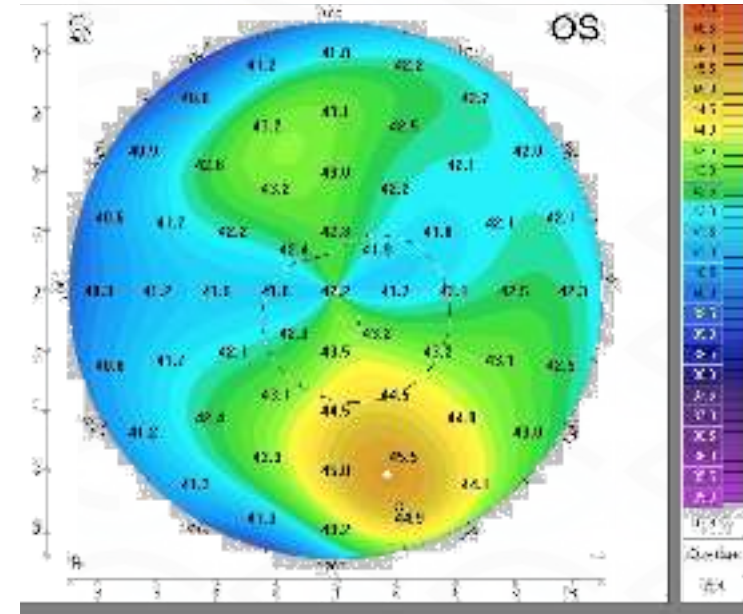
Look for the 5c



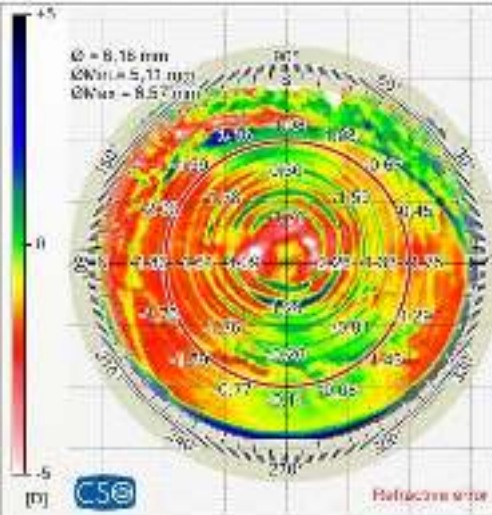
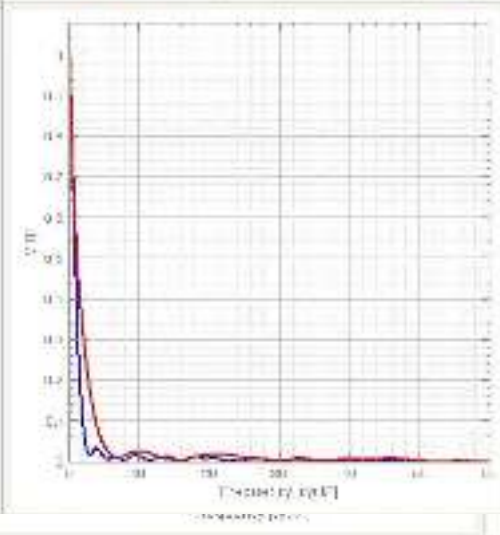
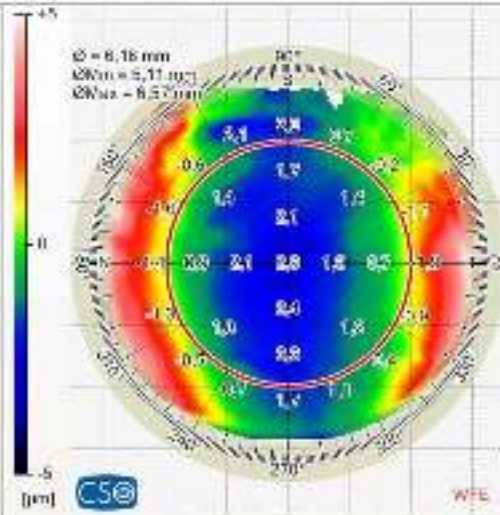
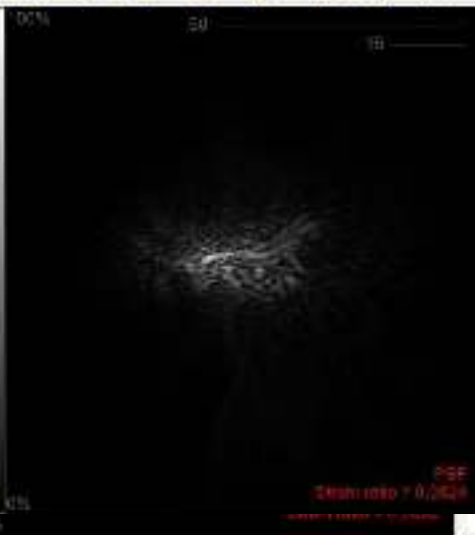
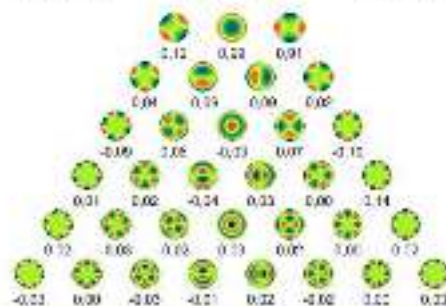
- Cylinder
- Cornea
- Capsule
- Cystoid macular edema
- Centration

Cylinder / refractive error

- Laser refractive surgery
- Astigmatism greater than 0.75 should be treated
 - <1.00 D LRI or OCCI
 - >1.00 D TPRK

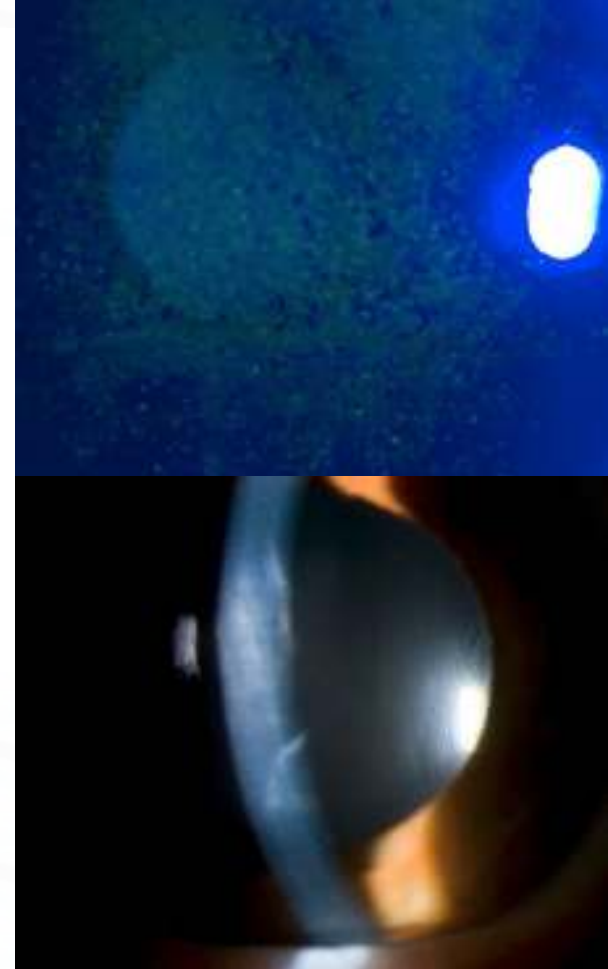


	SpH [2]	Cyl [3]	Ax
Ø 8 mm	-0.34	-1.29	84°
Ø 12 mm	-0.36	-1.32	84°
RMS [Eq D]		LOA = 1.35	HCA = 0.28



Cornea

- Dry eye / Ocular surface disease
 - Cyclosporine 0.05%
 - Treat MGD
- Endothelial damage
 - Even subtle oedema can decrease contrast sensitivity



Donnenfeld et al, Cyclosporine 0.05% to improve visual outcomes after MFIOL implantation, J Cataract Refract Surg, 2010;36:1095–100

Light dispersion

- Light dispersion (Scattering, straylight...)
- Media opacities
 - PCO
 - IOL calcification / Glistening
 - IOL edges / Discontinuities (edges of refractive zones, edges of diffractive steps)

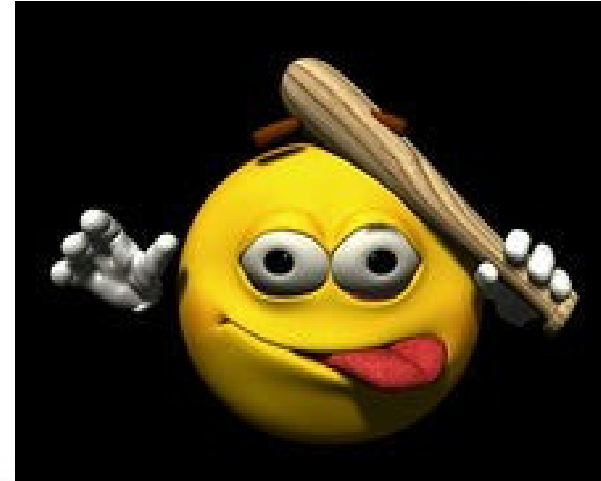


IOL Centration

- Multifocal IOLs have been designed to be centered at the visual axis
- A decentered IOL will produce unwanted HOAs
 - *Large pupil shift and misalignment between the visual and pupillary axis may play a role in the occurrence of photic phenomena (Tchah, 2017).*
- Kappa angle distance higher than 0.42 mm **IS A CONTRAINDICATION** multifocal implant

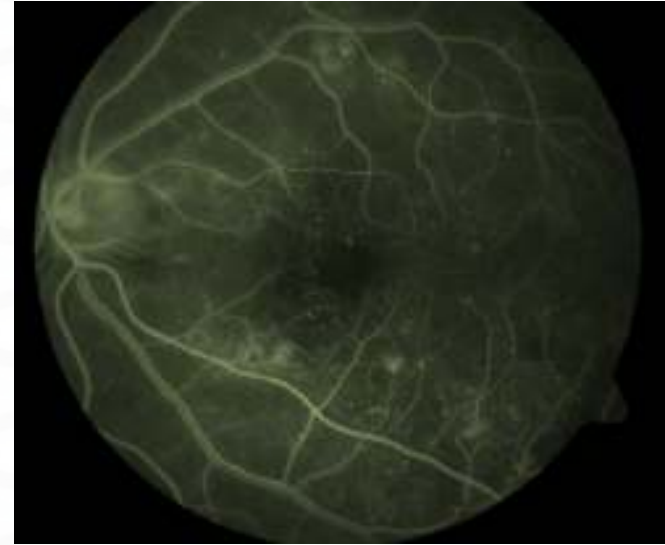
Pupil related problems

- Position of central IOL relative to limbus
 - *Center the IOL on pupil, Argon laser iridoplasty*
 - *Poor reading → brimonidine, pilocarpine*
 - *Poor distance → diluted mydriatic*



Retinal pathology

- Cystoid macular edema
 - In conventional cataract surgery, up to a 70 % have macular thickening on OCT and 12 % visually significant
 - Prophylactic NSAID
- Lamellar macular hole, epiretinal membrane



Posterior capsule opacification

- Loss of contrast sensitivity and the glare worsens
- Capsulotomy larger than normal
- Be sure that the capsule is the problem

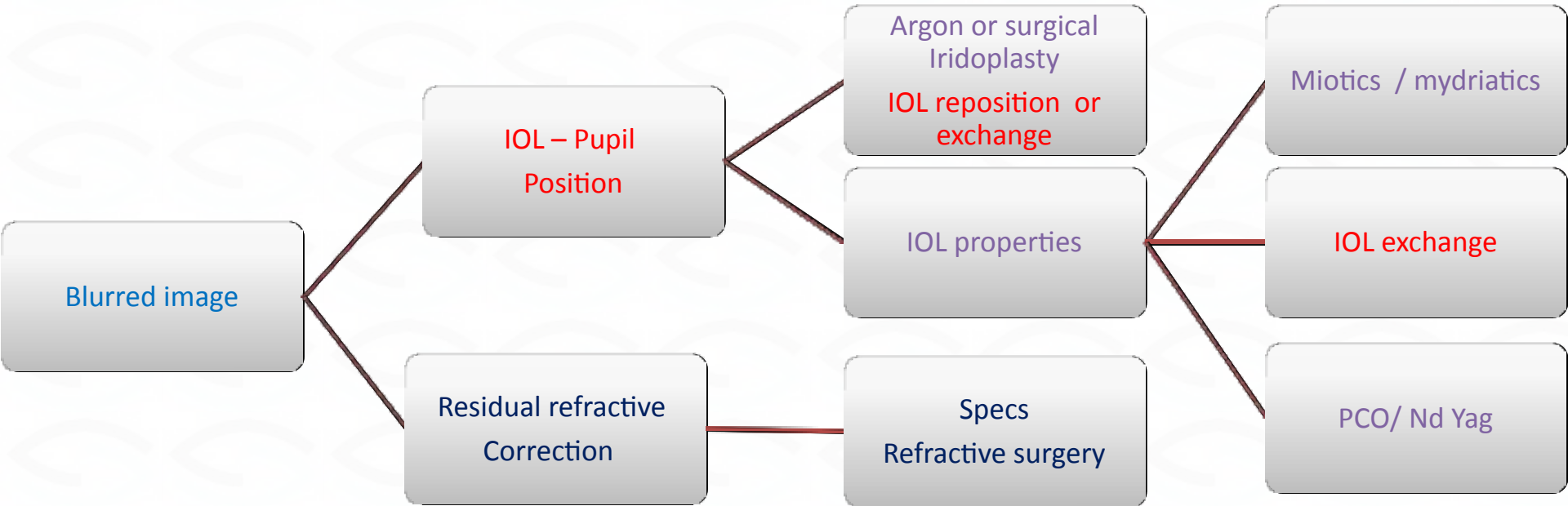
Pearls

- Careful with low myopes, high addition , bifocals and spherical IOL
- Treat the ocular co morbidity
- IOL exchange **SHOULD** be the last option



CI

Blurred vision



2nd
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