INTERNATIONAL CONGRESS OF THE

EGYPTIAN

OPHTHALMOLOGICAL SOCIETY

EOS 1902

In collaboration with: MEACO

DYSPHOTOPSIA

By

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Ophthalmology

Alexandria - Egypt

ALEXANDRIA UNIVERSITY

i-care

What is dysphotopsia?

A number of unwanted “optical phenomena” that could interfere with visual function following

Dysphotopsia?

Positive Dysphotopsia
P.D

Negative Dysphotopsia
N.D

Can coexist in the same patient

INCIDENCE

- **49% had either P.D or N.D sometime after cataract surgery**
- **Decreases to 2% over the following 12 months**

Dysphotopsia in phakic and pseudophakic patients: Incidence and relation to intraocular lens type

Rob Tester, BA, Nathan Leon Pace, MD, Mstar, Matthew Samore, MD, Randall J. Olson, MD

ABSTRACT

Purpose: To determine the relationship between various intraocular lens (IOL) types and the incidence of unwanted light images.

Setting: The Moran Eye Center, University of Utah, Salt Lake City, Utah, USA.

Methods: A telephone questionnaire was administered to 302 postoperative patients who had received 1 of 6 commonly used IOLs between January and September 1998. Patients were included only if they had uneventful cataract surgery, no additional ocular pathology, and a postoperative best corrected visual acuity of 20/25 or better. A control group of 50 patients with the diagnosis of presbyopia only also participated in the questionnaire. Patients reported on incidence of glare, light sensitivity, and unwanted images. The data were analyzed for statistically significant relationships between incidence of photopsias and IOL type.

Results: The AcrySof 5.5 mm, AcrySof 6.0 mm, and SI-40 groups reported significantly more unwanted images than the control group ($P = .0014$). The 2 AcrySof groups also reported a greater incidence of light to the side causing a central flash, and the SI-40 group, a higher incidence of glare. The control group was more likely to experience symptoms of glare than any pseudophakic group. Overall, a mean of 49% of patients reported some light-related phenomenon postoperatively. The majority in all groups reported being satisfied with their eyesight despite the light-related problems.

Conclusions: A significant number of pseudophakic patients reported symptoms of dysphotopsia. Patients who received an acrylic IOL with flattened edges were at increased risk of experiencing images associated with edge reflections. The SI-40 lens group, although less than the AcrySof groups, reported a higher incidence of glare than the non-AcrySof groups; however, it also had the highest number of patients still driving at night. The phakic population commonly experienced glare reported as more severe than several of the IOL groups. *J Cataract Refract Surg 2000; 26:810–818*
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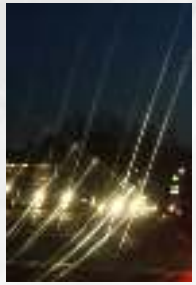
EOS 2025
EGYPTIAN OPHTHALMOLOGICAL SOCIETY

Positive Dysphotopsia

P.D

Described by patients as

- Light streaks
- Light arcs
- Flashes
- Halos
- Starbursts

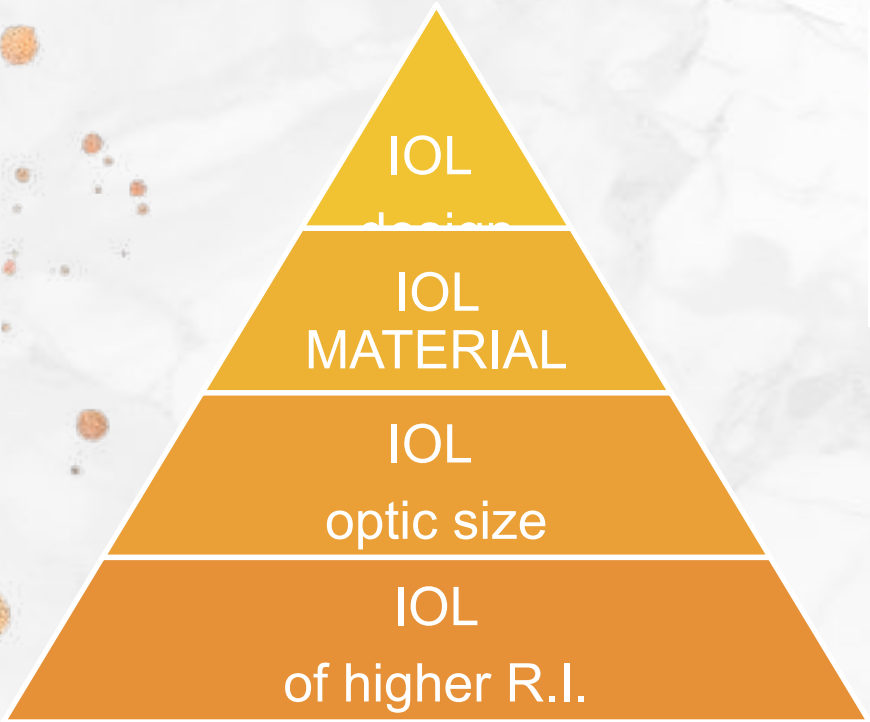


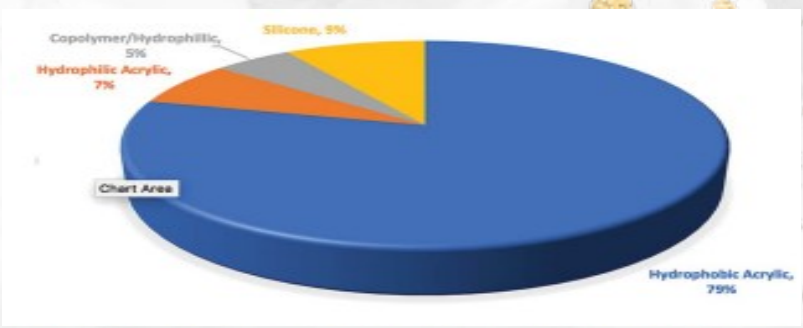
All induced by external source of light

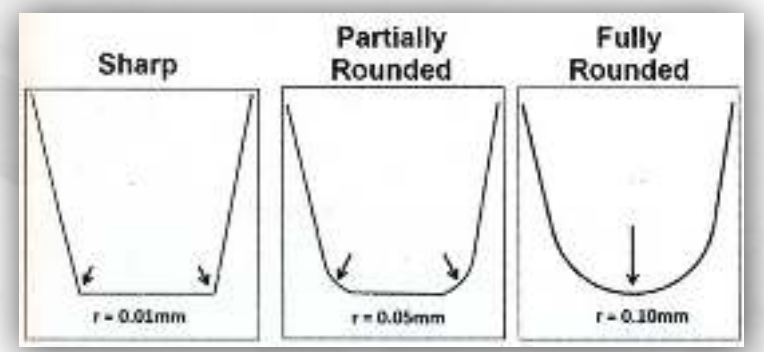
Positive Dysphotopsia

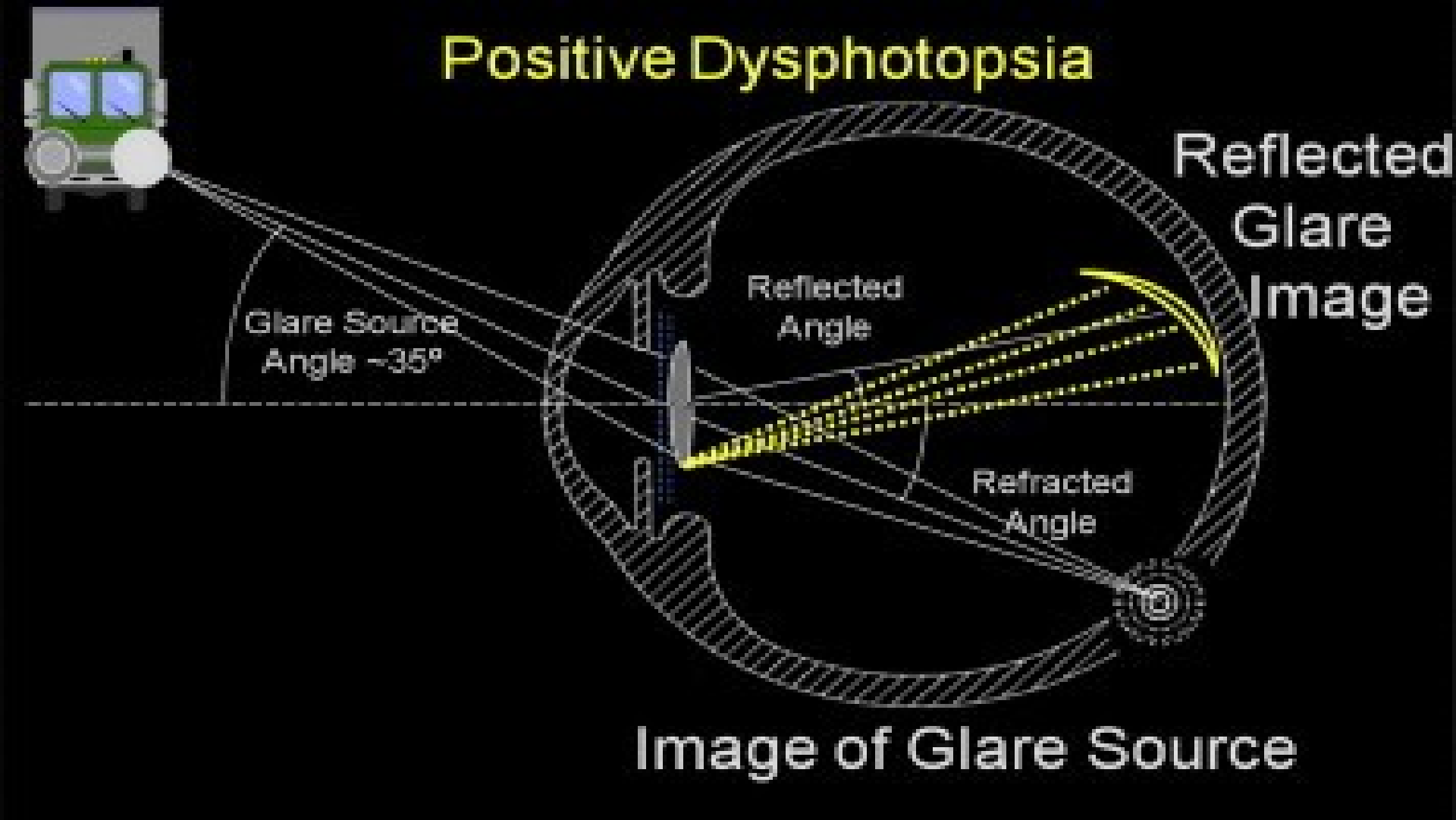
Aetiology

Multi factorial








Positive Dysphotopsia
Reflected Glare Image
Glare Source Angle ~35°
Reflected Angle
Refracted Angle
Image of Glare Source

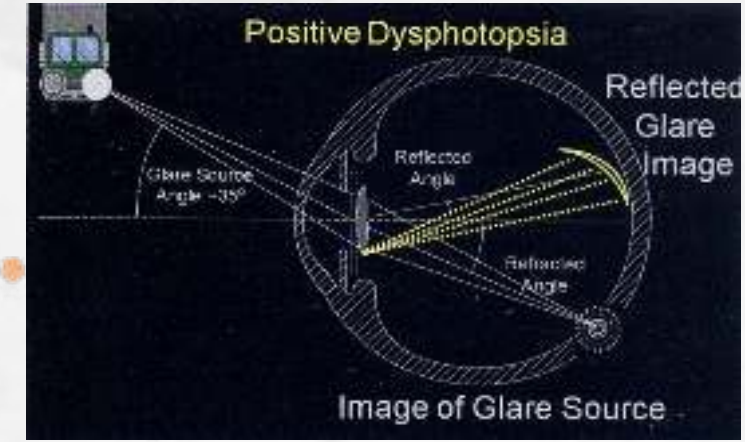
Mechanism of +ve Dysphotopsia

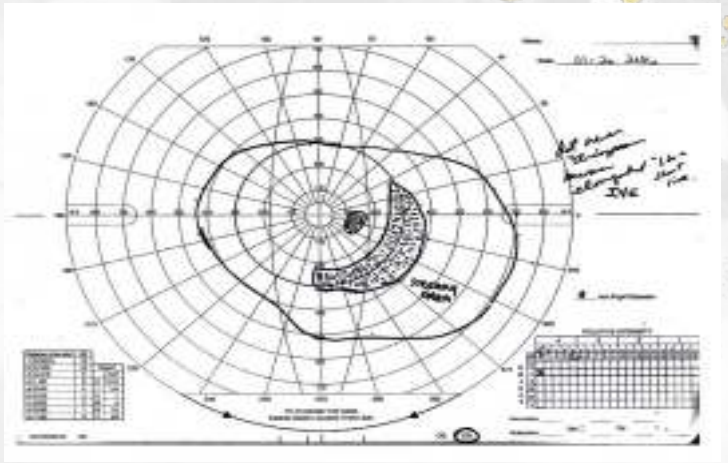
Reflections from the front and back surfaces of equiconvex, unequal biconvex IOL designs	Higher R.I. of optic materials

Erie JC et al, J Cat Ref Surg, 2001

+VE DYSPHOTOPSIAS

PATIENT VIEW





The missing rays would cause a variation in the intensity of the image which would be described as "abnormal". This, patient was describing it as a "STREAKY AREA" on the nasal visual field near 35 radially.

Osher, J Cat Ref Surg, 2005

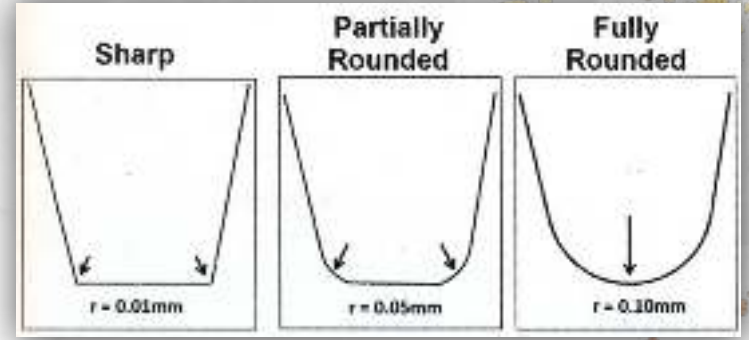
+ve Dysphotopsias Characteristics

-It requires a large pupil enough for the incidence ray to strike near the edge of the IOL, as occurs in low mesopic or scotopic conditions.	- It typically disappears with pupil constriction.

Management of PD

Prevention

IOL design and material:



- **Rounding the anterior edge of a square-edged IOL**
- **Texturing the square edge**
- **Lower P.I**

Management of PD

Surgical options:

- **IOL exchange to another desing and/or material.**
- **IOL exchange with reverse Optic Capture**
  Putting the nasal and temporal edges of a vertically oriented IOL above the rhexis.

IOL

ARTICLE

Surgical management of positive dysphotopsia: U.S. perspective

2020

Samuel Masket, MD, Zsofia Rupnick, MD, Nicole R. Fram, MD, Stephen Kwong, BS, Jessie McLachlan, BA

Purpose: To evaluate clinical outcomes of intraocular lens (IOL) exchange for intolerable positive dysphotopsia (PD).

Setting: Private practice, Advanced Vision Care, Los Angeles, California, USA.

Design: Retrospective review, case series.

Methods: Fifty-six eyes of 46 pseudophakic patients requiring surgical management of PD between 2013 and 2019 were reviewed. Thirty-seven eyes had PD alone and 19 had combined negative dysphotopsia and PD. Inclusion criteria: corrected distance visual acuity of 20/30 or better without significant corneal, retinal, or optic nerve pathology. Exclusion criteria: corneal, macular, or optic nerve disease and multifocal dysphotopsia alone (defined patterns of concentric multiple halos or spider web patterns when looking at a point source of light). Primary outcome measure was improvement or resolution of self-reported PD symptoms by 3 months postoperatively. Secondary outcome measures included analysis of intraocular lenses (IOLs) that induced PD for IOL material, index of refraction, and edge design.

Results: IOL materials successful in the alleviation of PD symptoms were as follows: 20 (87.8%) of 33 silicone, 15 (76.2%) of 21 copolymer, and 2 poly(methyl methacrylate) (100%). However, when considering IOL exchange for an acrylic to silicone optic or acrylic to collamer optic, the percentages of improvement are indistinguishable at 87% and 88%, respectively.

Conclusions: PD symptoms might be improved by changing the IOL material and, therefore, index of refraction. Although edge design plays an important role in etiology, changing the IOL material to a lower index of refraction may prove to be an effective surgical strategy to improve intolerable PD.

J Cataract Refract Surg 2020; 46:1474–1479 Copyright © 2020 Published by Wolters Kluwer on behalf of ASCRS and ESCRS

Negative Dysphotopsia

N.D

First described by Davison in 2000

A dark shadow in the temporal visual field perceived by the patient in a manner similar to a retinal detachment or vascular occlusion

Negative Dysphotopsia Incidence

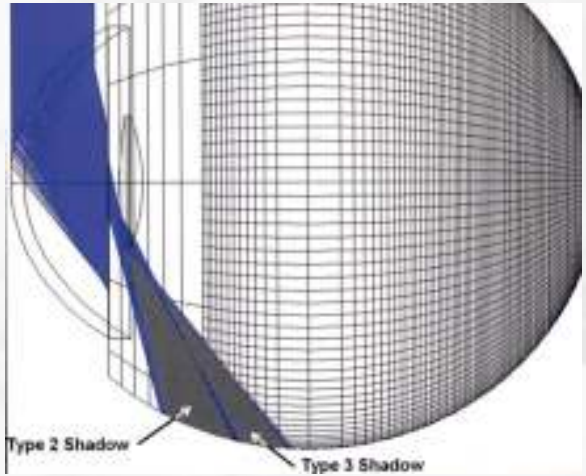
- **Transient in nature with spontaneous resolution.**

15.2% on day 1 post operatively.
3.2% at 1 year.
2.4% at 3 years.

Osher RH, J Cat Ref Surg, 2008

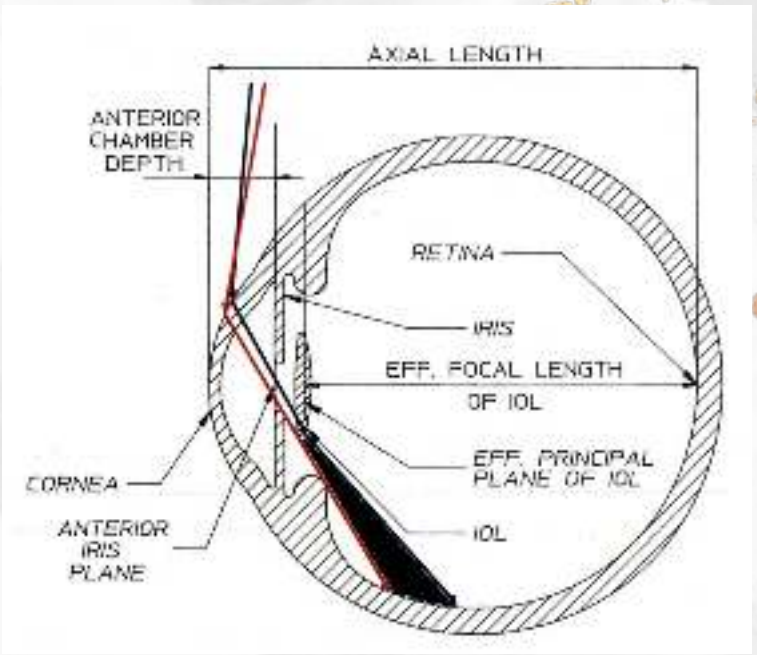
Negative Dysphotopsia

- **The absence of light reaching certain points of the retina that manifests as a**



Mechanism of Negative Dysphotopsia

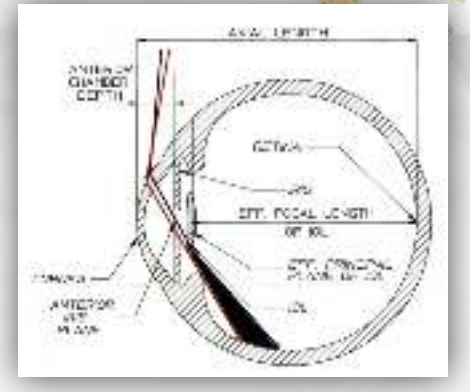
The red ray just misses the IOL and is not refracted, while the blue ray is refracted by the anterior surface and then the posterior surface of the IOL. The dark region in between both rays would appear as a shadow if it fell on functional retina.

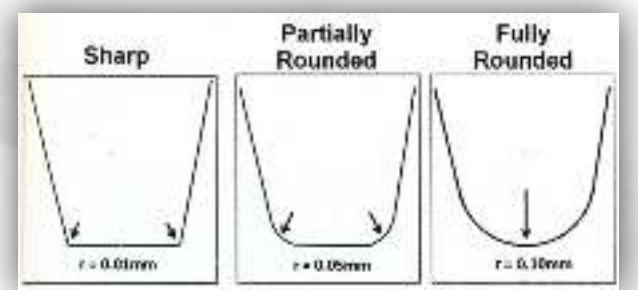


The width of the shadow is determined by the optical design of the IOL

1- Diopteric power
More with higher power

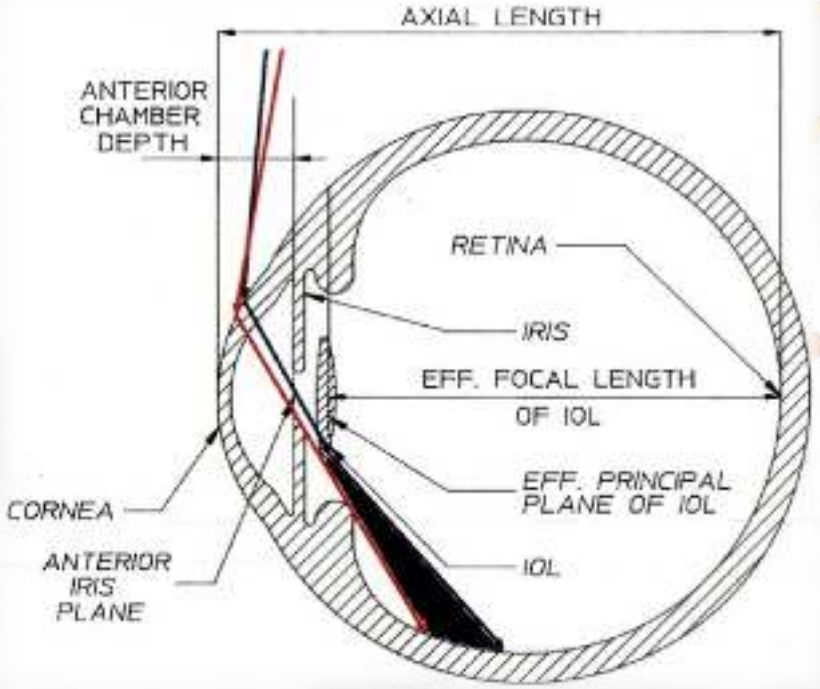
2- Edge design
Rounding the front edge of the IOL decrease the shadow.



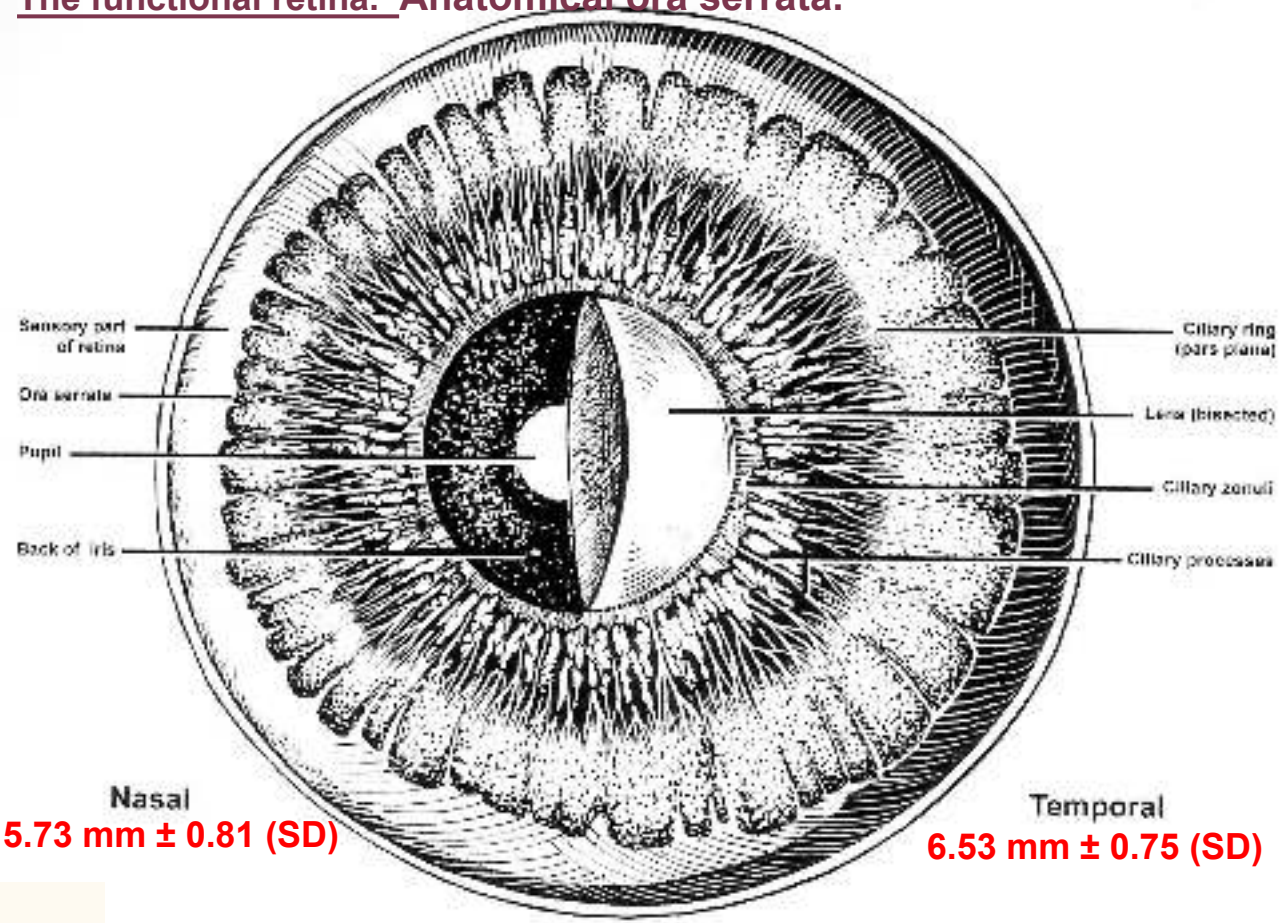


THE FUNCTIONAL RETINA

The location of the shadow relative to the beginning of the functional retina determines whether the patient perceives –ve dysphotopsia

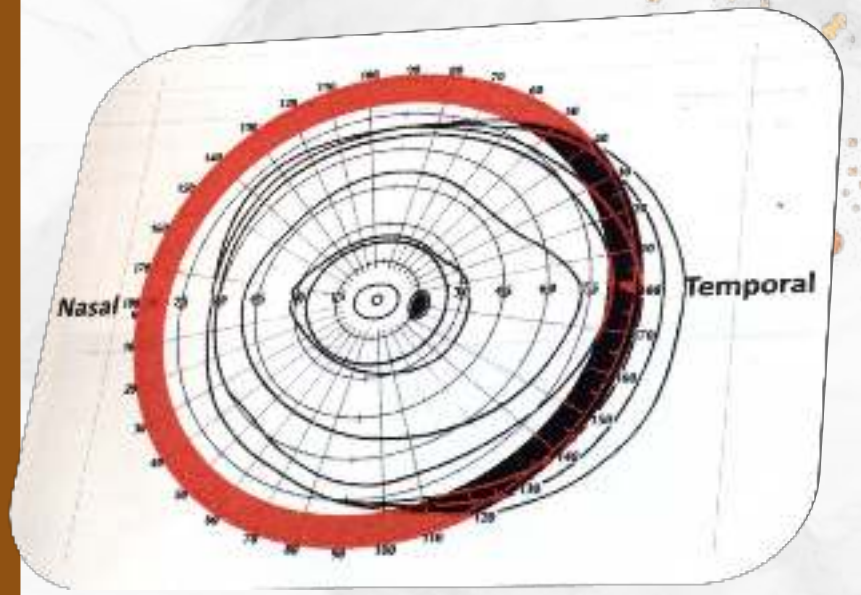


The functional retina. Anatomical ora serrata.



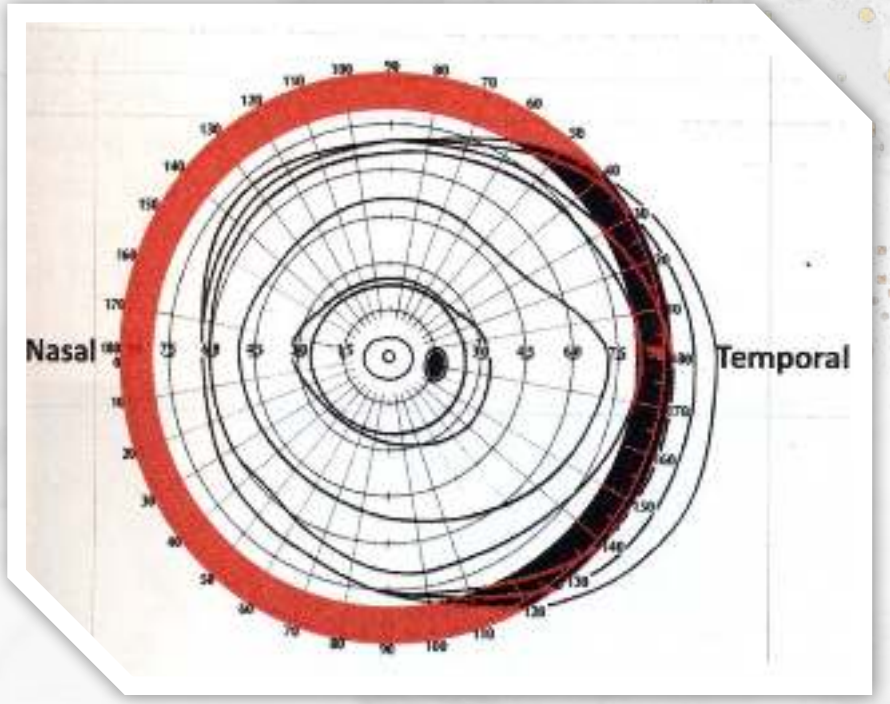
The functional retina

The retina is not sensitive to light in its periphery, particularly on the temporal side where there are several millimeters of histologically normal retina posterior to the ora serrata that are not represented in the visual field.



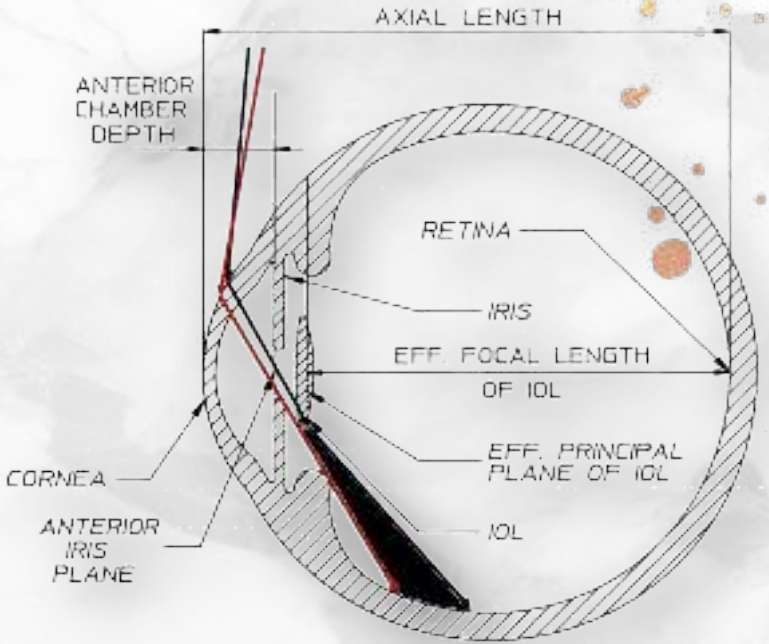
THE FUNCTIONAL RETINA

The patient will perceive the shadow on his temporal field as a dark crescent- shaped shadow between 86.0 to 100.0 degrees (14.0 degrees wide).



Space between the IOL and the Iris:

The shadow can only occur if the IOL is located an adequate distance behind the iris to produce a shadow on functional retina



Space between the IOL and the Iris:

- **The typical space of 0.45 mm would have a shadow width of approximately 14.o degrees for acrylic and only 2.3 degrees for silicone IOL**
- **Clinical observation :**
- **-ve dysphotopsia is more frequently observed**

REVIEW/UPDATE

Negative dysphotopsia: A perfect storm

Bonnie An Henderson, MD, Ivayla I. Geneva, MD, PhD

2015

-VE DYSPHOTOPSIA

Primary Optical Factors:

1- Small pupil.
2- A distance behind the pupil.
3- A sharp- edged design.
4- A high index of refraction optic.
5- A functional nasal retina that extends anterior to the location of the shadow.

-VE DYSPHOTOPSIA

Secondary Optical Factors:

1- Patient's angle α

normal 5.2 horizontal angle α where the eye is turned temporally, exposing more nasal retina and less temporal retina.

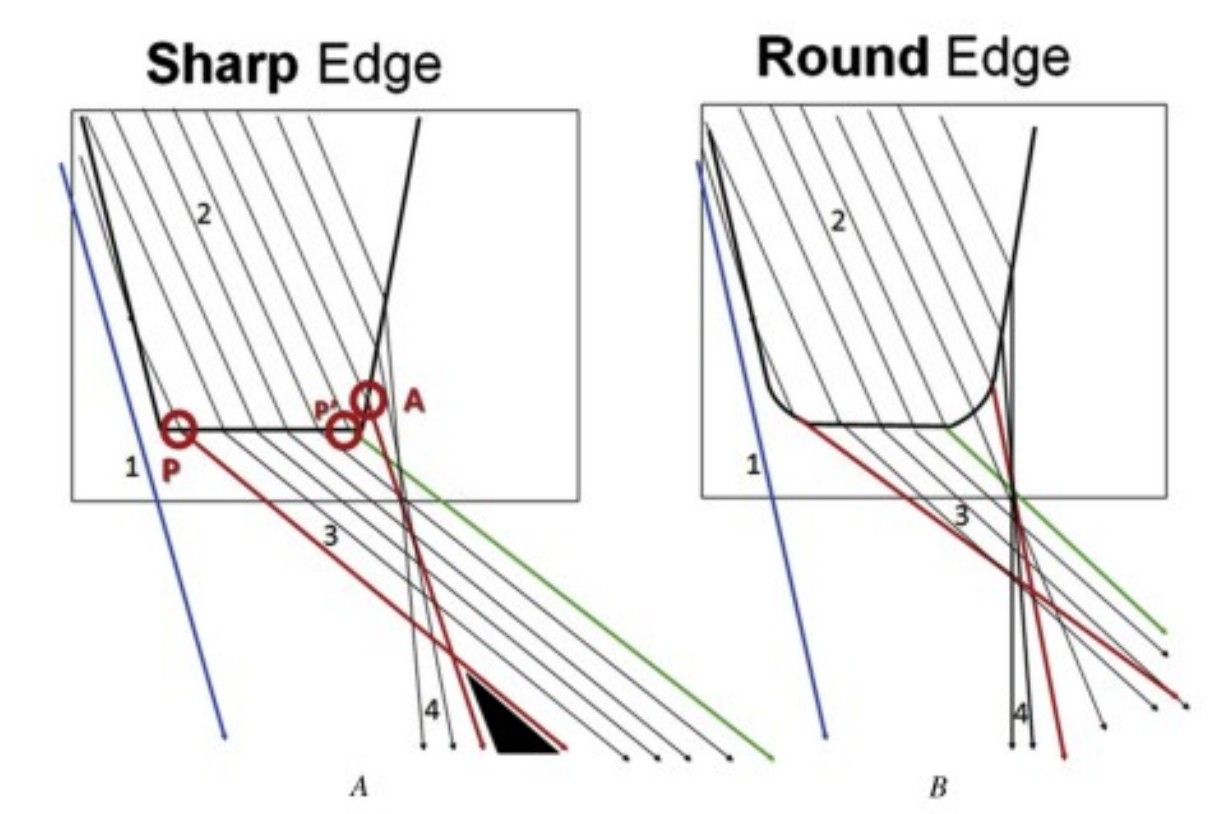
2- Nasal decentration of the pupil

normally displaced nasally 2.6 degrees, so it is nearer the nasal edge of the IOL than the temporal edge.

Surgical prevention of –ve Dysphotopsias

Choice of IOL:

1-with anterior truncated or rounded edge rather than sharp- edged.
2-IOL with frosted edge.
3-IOL with posterior surface flatter than anterior surface.


Sharp Edge
Round Edge
1
2
3
4
P
P'
A
A
B

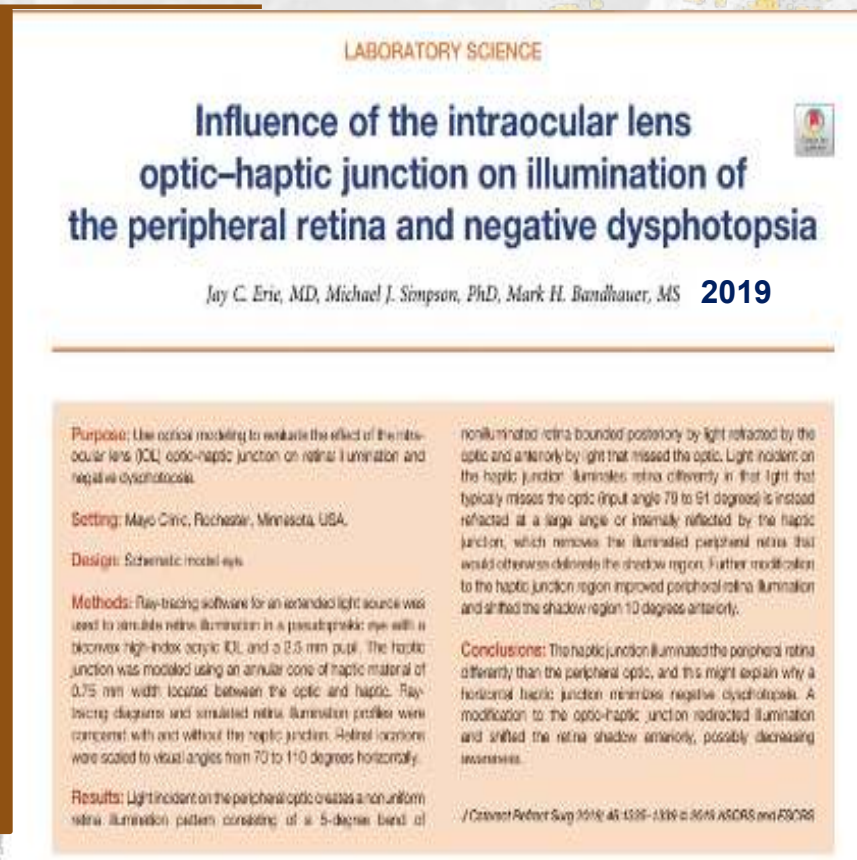
Surgical prevention of -ve Dysphotopsias

Placing the haptics of a single- piece IOL in down and temporal position appears to reduce the incidence of -ve Dysphotopsias.

Surgical prevention of -ve Dysphotopsias

SURGICAL PREVENTION OF -VE DYSPHOTOPSIAS

The edge of the IOL is more peripheral where the shoulders of the haptic inserts into the optic. The origin of the rays at the IOL edge would be moved laterally to the edge of the haptic, causing the retinal intercepts of the shadows to be more anterior and smaller in width.



LABORATORY SCIENCE

Influence of the intraocular lens optic–haptic junction on illumination of the peripheral retina and negative dysphotopsia

Jay C. Erie, MD, Michael J. Simpson, PhD, Mark H. Bandhauer, MS **2019**

Purpose: Use optical modeling to evaluate the effect of the intraocular lens (IOL) optic-haptic junction on retinal illumination and negative dysphotopsia.

Setting: Mayo Clinic, Rochester, Minnesota, USA.

Design: Schematic model eye.

Methods: Ray-tracing software for an extended light source was used to simulate retina illumination in a pseudophakic eye with a biconvex high-index acrylic IOL and a 2.5 mm pupil. The haptic junction was modeled using an annular cone of haptic material of 0.75 mm width located between the optic and haptic. Ray-tracing diagrams and simulated retina illumination profiles were compared with and without the haptic junction. Retinal locations were scaled to visual angles from 70 to 110 degrees horizontally.

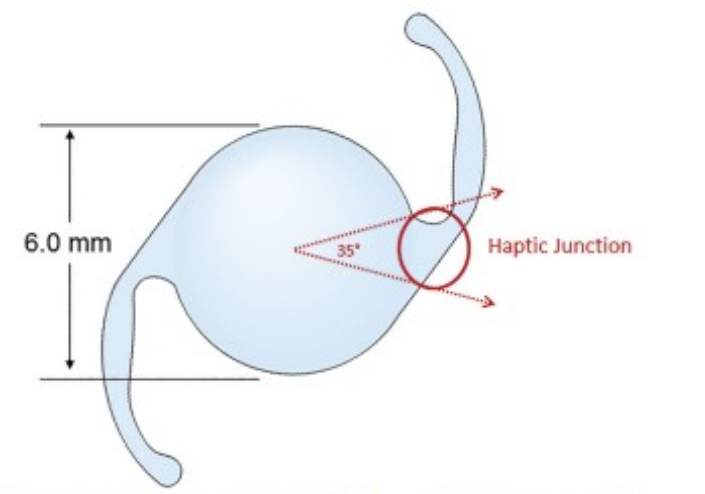
Results: Light incident on the peripheral optic creates a non-uniform retina illumination pattern consisting of a 5-degree band of nonilluminated retina bounded posteriorly by light refracted by the optic and anteriorly by light that missed the optic. Light incident on the haptic junction illuminates retina differently in that light that typically misses the optic (input angle 79 to 91 degrees) is instead refracted at a large angle or internally reflected by the haptic junction, which removes the illuminated peripheral retina that would otherwise delineate the shadow region. Further modification to the haptic junction region improved peripheral retina illumination and shifted the shadow region 10 degrees anteriorly.

Conclusions: The haptic junction illuminated the peripheral retina differently than the peripheral optic, and this might explain why a horizontal haptic junction minimizes negative dysphotopsia. A modification to the optic-haptic junction redirected illumination and shifted the retina shadow anteriorly, possibly decreasing awareness.

J Cataract Refract Surg 2019; 45:1326–1330 © 2019 ASCRS and ESCRS

Surgical prevention of -ve Dysphotopsia

To use IOL with a modified design



Surgical prevention of -ve Dysphotopsia

To use a 7.00 mm optic instead of 6 mm. This makes the dark region on the nasal retina more peripheral

Effect of a 7.0 mm intraocular lens optic on peripheral retinal illumination with implications for negative dysphotopsia

Jay C. Erie, MD, Michael J. Simpson, PhD, Michael A. Mahr, MD

2022

Purpose: To use optical modeling to compare a 6.0 mm and 7.0 mm intraocular lens (IOL) optic diameters on peripheral retinal illumination with implications for negative dysphotopsia.

Setting: Mayo Clinic, Rochester, Minnesota, and Simpson Optics LLC, Arlington, Texas.

Design: Model eye.

Methods: Ray-tracing software was used to simulate retinal illumination from an extended light source for a pseudophakic eye with in-the-bag biconvex IOLs (refractive index [n] = 1.46 and 1.55) and a 2.5 mm pupil. Ray-tracing diagrams and simulated retina illumination profiles were compared using the 6.0 mm and 7.0 mm optic diameter IOLs. Retinal locations were scaled to relative visual angles from 70 to 110 degrees horizontally.

Results: A 7.0 mm optic (n = 1.46) expands the image field by 2.8 degrees compared with a 6.0 mm optic. High-angle input light misses a 7.0 mm optic at a larger visual angle than a 6.0 mm optic, shifting illumination of the peripheral retina by this light anteriorly by 5.6 degrees. Consequently, a region of non-illuminated peripheral nasal retina is enlarged and shifted peripherally using a 7.0 mm optic (visual angle, 86.3 to 96.3 degrees) compared with a 6.0 mm optic (visual angle, 83.5 to 90.7 degrees). Similar illumination changes were seen modeling a 1.55 n IOL.

Conclusions: A narrow dark region in the nasal retina when using a 6.0 mm optic is changed to a broader, more peripheral dark region when using a 7.0 mm optic. An extended, more peripheral dark nasal region may make a temporal shadow less bothersome and explain lower negative dysphotopsia rates using a 7.0 mm optic.

J Cataract Refract Surg 2022; 48:95–99 Copyright © 2021 Published by Wolters Kluwer on behalf of ASCRS and ESCRS

Surgical prevention of -ve Dysphotopsia

To use

LABORATORY SCIENCE

A modified intraocular lens design to reduce negative dysphotopsia

Jay C. Erie, MD, Michael J. Simpson, PhD, Mark H. Randleman, MS

2019

Purpose: To use ray-tracing analysis and simulated retinal illumination profiles to design an intraocular lens (IOL) that prevents or reduces negative dysphotopsia after cataract surgery.

Setting: Mayo Clinic, Rochester, Minnesota, and Simpson Optics LLC, Arlington, Texas, USA.

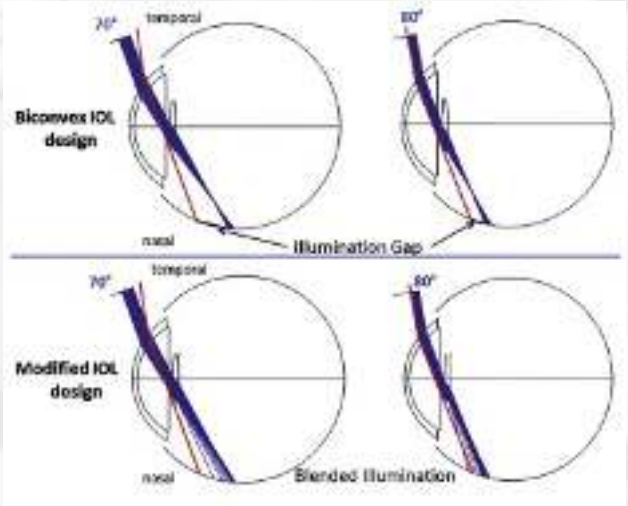
Design: Experimental study.

Methods: Ray-tracing software was used to simulate peripheral retinal illumination from an extended light source for a pseudophakic eye with a biconvex high refractive index IOL. Ray intensities were adjusted to include the effects of the surface reflections and the energy reduction caused by pupil obliquity at high incident angles. The results were compared with similar optical modeling of a modified IOL design with a concave region on the peripheral posterior surface.

Results: For a standard biconvex high refractive index IOL, simulated retinal illumination profiles showed an area of nonilluminated peripheral nasal retina at a relative visual angle of approximately 85 degrees to 90 degrees. Using a modified IOL optic with a peripheral concave posterior surface, ray-tracing diagrams showed that peripheral input rays were redirected anteriorly into the nonilluminated dark area of the peripheral retina. Simulated retina illumination images confirmed that the redirected input rays improved illumination to the peripheral retina, including the dark area.

Conclusions: Optical modeling showed that the new IOL design provides more uniform illumination of the peripheral nasal retina and specifically illuminates the dark region of the nasal retina associated with negative dysphotopsia. This modified IOL design could prevent or reduce negative dysphotopsia after cataract surgery.

J Cataract Refract Surg 2019; 45:1013–1019 © 2019 ASCRS and ESCRS



Treatment of Negative Dysphotopsia

Noninvasive Approaches

1- Waiting for neuroadaptation
2-Mydriatic agents
3-Use sunglasses in night driving
4-Wear glasses with thick frames blocking the light from entering the pupil temporally

Treatment of Negative Dysphotopsia

Invasive Approaches

1- YAG Laser Capsulectomy of the nasal anterior capsule

Major improvement in most of the studied patients.

CASE REPORT

Resolution of negative dysphotopsia after laser anterior capsulotomy

2013

David L. Cooke, MD, Susan Kasko, MS, Lucas O. Platt, DO

It has been suggested that a clear anterior nasal capsule contributes to negative dysphotopsia and that symptoms may resolve with opacification of the capsule. We describe a case in which negative dysphotopsia occurred despite a translucent anterior peripheral capsule and resolved following laser removal of the anterior nasal capsule.

Financial Disclosure: No author has a financial or proprietary interest in any material or method mentioned.

J Cataract Refract Surg 2013; 39:1107–1109 © *2013 ASCRS and ESCRS*

Treatment of Negative Dysphotopsia

Invasive Approaches

2- Reverse Optic Capture

Prolapsing the optic anterior to the capsule results in resolution of negative dysphotopsia.

ARTICLE

Pseudophakic negative dysphotopsia: Surgical management and new theory of etiology

Samuel Masket, MD, Nicole R. Fram, MD

2010

PURPOSE: To evaluate the benefit of various surgical methods to address pseudophakic negative dysphotopsia.

SETTING: Private practice, Los Angeles, California, USA.

DESIGN: Interventional case series.

METHODS: The following 4 surgical methods were used to treat negative dysphotopsia: secondary piggyback intraocular lens (IOL) implantation, reverse optic capture, in-the-bag IOL exchange, and iris suture fixation. Ultrasound biomicroscopy (UBM) was used to analyze posterior chamber anatomy. The primary outcome was partial or complete resolution of the negative dysphotopsia symptoms 3 months postoperatively.

RESULTS: Twelve eyes of 11 patients with negative dysphotopsia had surgical treatment. All 10 patients who had piggyback IOL implantation or reverse optic capture had partial or complete resolution of symptoms by 3 months. No patient who had in-the-bag IOL exchange ($n = 3$) or iris suture fixation of the capsular bag–IOL complex ($n = 1$) improved despite alteration of IOL material or edge design in the case of IOL exchange or UBM confirmation of posterior chamber collapse in the case of iris suture fixation of the capsular bag–IOL complex.

CONCLUSIONS: Consistent with a new hypothesis, resolution of negative dysphotopsia symptoms depended on IOL coverage of the anterior capsule edge rather than on collapse of the posterior chamber alone. Furthermore, negative dysphotopsia was not attributed to a particular IOL material or edge design.

Financial Disclosure: Neither author has a financial or proprietary interest in any material or method mentioned. Additional disclosures are found in the footnotes.

J Cataract Refract Surg 2011; 37:1199–1207 © 2011 ASCRS and ESCRS

Online Video

Treatment of Negative Dysphotopsia

Invasive Approaches

3- Piggy back IOLs

Implanting a secondary plano IOL in the sulcus to decrease the iris-to-IOL distance..

ARTICLE

Effect of supplementary implantation of a sulcus-fixated intraocular lens in patients with negative dysphotopsia

Natalia Y. Makhotkina, MD, Vincent Dugrain, PhD, Daniel Purchase, EngD, Tos T.J.M. Berendschot, PhD, Rudy M.M.A. Nuijts, MD, PhD

2017

Purpose: To evaluate whether the outcome of negative dysphotopsia treatment by implantation of a Sulcoflex intraocular lens (IOL) can be understood using individual biometry and optical modeling data.

Setting: University Eye Clinic, Maastricht University Medical Centre, Maastricht, the Netherlands.

Design: Retrospective case series.

Methods: Patients with negative dysphotopsia were treated with supplementary implantation of a sulcus-fixated IOL. Preoperative and postoperative ray-tracing optical models of eyes with negative dysphotopsia were constructed in the Zemax Optic Studio program using individual biometric data. The relationship between biometric parameters, ray-tracing data, and the course of negative dysphotopsia was evaluated.

Results: The study comprised 8 patients (10 eyes). After surgery, negative dysphotopsia resolved completely in 6 eyes, partially in 2 eyes, and persisted in 2 eyes. There was no relationship between the course of negative dysphotopsia and age, IOL power, or individual biometry results other than a larger angle κ that was observed in 2 patients with persistent negative dysphotopsia after surgery. Preoperative ray-tracing models showed a decrease in light irradiance at the periphery relative to the center of visual field. After sulcus-fixated IOL implantation, this decrease partially resolved, in particular, for a small pupil aperture ($P < .05$), and it was more prominent in patients in whom negative dysphotopsia resolved completely than in those with partial or persistent negative dysphotopsia ($P = .065$ at 1.5 mm aperture).

Conclusions: Of all individual biometry results, only angle κ showed a relationship with the course of negative dysphotopsia. In patient-specific optical modeling of sulcus-fixated IOL implantation, the increase in simulated light irradiance at the periphery was related to the course of negative dysphotopsia.

J Cataract Refract Surg 2018; 44:209–218 © 2018 ASCRS and ESCRS

Supplemental material available at www.jcrsjournal.org.

Treatment of Negative Dysphotopsia

Invasive Approaches

4- Sulcus – fixated IOL

ARTICLE

Sulcus-fixated intraocular lens implantation for the management of negative dysphotopsia

Tomas R. Burke, MD, MRCPI, MRCOphth, Larry Benjamin, FRCS, FRCOphth, DO

2014

PURPOSE: To determine whether intraocular lens (IOL) exchange with insertion of a sulcus-fixated IOL is an effective treatment for the management of pseudophakic negative dysphotopsia.

SETTING: Department of Ophthalmology, Stoke Mandeville Hospital, Buckinghamshire, United Kingdom.

DESIGN: Case series.

METHODS: Participants in the study were recruited prospectively from the clinic at the time of diagnosis or retrospectively from the operating room logs by identifying all patients who had IOL exchanges over a 4-year period (2009 to 2012).

RESULTS: Five eyes of 5 women with negative dysphotopsia were treated with IOL exchange and replacement with a 3-piece IOL (Acrysof MA60AC) inserted in the ciliary sulcus. All patients had a resolution of the negative dysphotopsia symptoms. One patient had primary insertion of a sulcus IOL in the fellow eye and did not develop negative dysphotopsia symptoms.

CONCLUSION: Intraocular lens exchange with insertion of a 3-piece IOL in the ciliary sulcus appears to be a safe and effective treatment for the management of pseudophakic negative dysphotopsia.

Financial Disclosure: Neither author has a financial or proprietary interest in any material or method mentioned.

J Cataract Refract Surg 2014; 40:1469–1472

Treatment of Negative Dysphotopsia

Invasive Approaches

5- Intraocular Lens exchange

Use a round-edged silicone IOL.

Use a modified IOL design.

ARTICLE

Intraocular lens exchange in patients with negative dysphotopsia symptoms

Péter Vámosi, MD, PhD, Béla Csákány, MD, János Németh, MD, DSc

2010

PURPOSE: to evaluate the results of intraocular lens (IOL) exchange in cases of severe negative dysphotopsia and to measure the distance between the iris and the IOL optic using ultrasound biomicroscopy (UBM).

SETTING: Szent Rókus Hospital and Eye Clinic, Semmelweis University, Budapest, Hungary.

METHODS: Data of patients with major negative dysphotopsia symptoms after phacoemulsification with IOL implantation were reviewed retrospectively. In cases in which IOL exchange was performed to diminish the symptoms, the distance between the iris and the anterior surface of the IOL optic was measured by UBM and compared with that in a group of nonsymptomatic pseudophakic patients (control group).

RESULTS: in 3806 cataract procedures, 5 eyes (4 patients) had severe negative dysphotopsia symptoms. Intraocular lens exchange was performed in 3 cases. In 1 case, the secondary IOL was implanted in the reopened capsular bag and the symptoms persisted. In 2 cases, the secondary IOL was implanted in the ciliary sulcus and the symptoms resolved. On UBM, the mean iris–optic distance was 0.45 mm ± 0.07 (SD) in the symptomatic group, 0.59 ± 0.29 mm in the control group ($n = 21$) ($P = .353$), and 0.00 mm in the sulcus-fixated group.

CONCLUSIONS: The iris–optic distance was not statistically significantly different between eyes with severe negative dysphotopsia symptoms and nonsymptomatic eyes. However, when IOL exchange reduced the iris–IOL distance, the severe negative dysphotopsia symptoms resolved.

Financial Disclosure: No author has a financial or proprietary interest in any material or method mentioned.

J Cataract Refract Surg 2010; 36:418–424 © 2010 ASCRS and ESCRS

Treatment of Negative Dysphotopsia

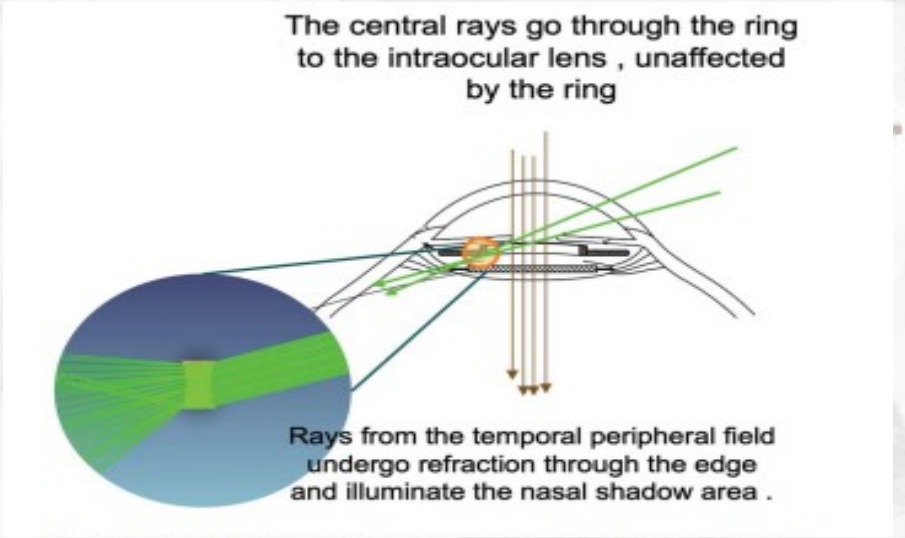
Invasive Approaches

6- To use

ARTICLE

Evaluation of a new device to treat negative dysphotopsia

2023



Treatment of Negative Dysphotopsia

Invasive Approaches

7-Iris suture fixation of capsule bag- IOL complex

To reduce the space between the iris and IOL.

But, not always successful.

Masket and Fram, J Cat and Ref Surg, 2011

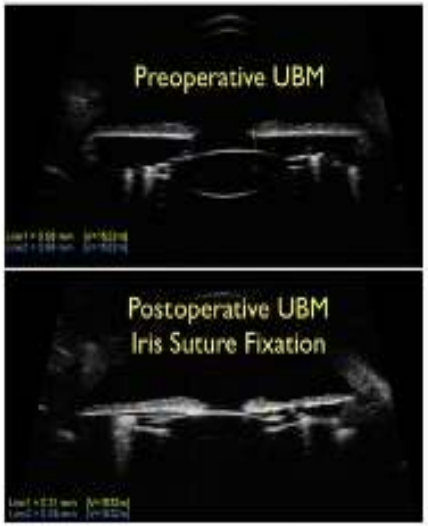


Figure 1. Preoperative and postoperative UBM shows reduced posterior chamber depth after capsular bag-IOL complex iris suture fixation (UBM = ultrasound biomicroscopy)

ARTICLE

Pseudophakic negative dysphotopsia: Surgical management and new theory of etiology

Samuel Masket, MD, Nicole R. Fram, MD

2011

PURPOSE: To evaluate the benefit of various surgical methods to address pseudophakic negative dysphotopsia.

SETTING: Private practice, Los Angeles, California, USA.

DESIGN: Interventional case series.

METHODS: The following 4 surgical methods were used to treat negative dysphotopsia: secondary piggyback intraocular lens (IOL) implantation, reverse optic capture, in-the-bag IOL exchange, and iris suture fixation. Ultrasound biomicroscopy (UBM) was used to analyze posterior chamber anatomy. The primary outcome was partial or complete resolution of the negative dysphotopsia symptoms 3 months postoperatively.

RESULTS: Twelve eyes of 11 patients with negative dysphotopsia had surgical treatment. All 10 patients who had piggyback IOL implantation or reverse optic capture had partial or complete resolution of symptoms by 3 months. No patient who had in-the-bag IOL exchange ($n = 3$) or iris suture fixation of the capsular bag–IOL complex ($n = 1$) improved despite alteration of IOL material or edge design in the case of IOL exchange or UBM confirmation of posterior chamber collapse in the case of iris suture fixation of the capsular bag–IOL complex.

CONCLUSIONS: Consistent with a new hypothesis, resolution of negative dysphotopsia symptoms depended on IOL coverage of the anterior capsule edge rather than on collapse of the posterior chamber alone. Furthermore, negative dysphotopsia was not attributed to a particular IOL material or edge design.

Financial Disclosure: Neither author has a financial or proprietary interest in any material or method mentioned. Additional disclosures are found in the footnotes.

J Cataract Refract Surg 2011; 37:1199–1207

Online Video

Persistent Dysphotopsia after cataract surgery is a significant cause for patient dissatisfaction.

The cause and management of both –ve Dysphotopsia and +ve Dysphotopsia are of significance

A " PERFECT STORM" OF A CONSTELLATION OF FACTORS IS NECESSARY FOR THE DEVELOPMENT OF NEGATIVE DYSPHOTOPSIA

REVIEW/UPDATE

Negative dysphotopsia: A perfect storm

Bonnie An Henderson, MD, Ivayla I. Geneva, MD, PhD 2015

STILL THERE IS UNRESOLVED ISSUES IN THE PREVENTION AND TREATMENT OF DYSPHOTOPSIA.


Thank You