



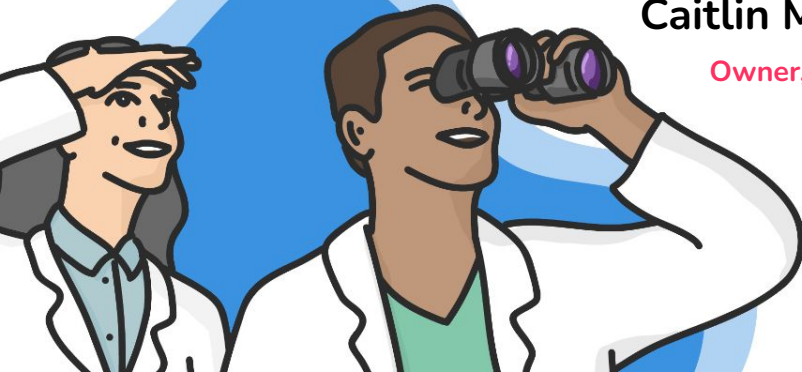
IN FOCUS

specialty contact lens & vision solutions

Interesting Applications for Soft Contact Lenses

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Owner, In Focus: Specialty Contact Lens &
Vision Solutions
Scottsdale, AZ



Disclosures

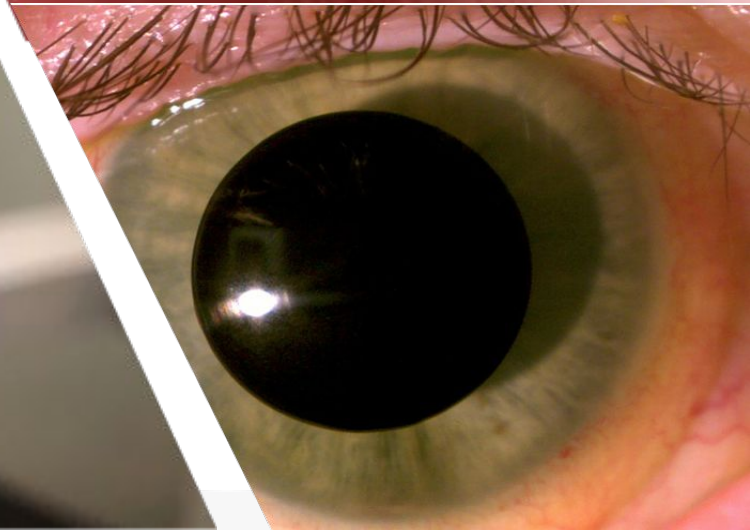
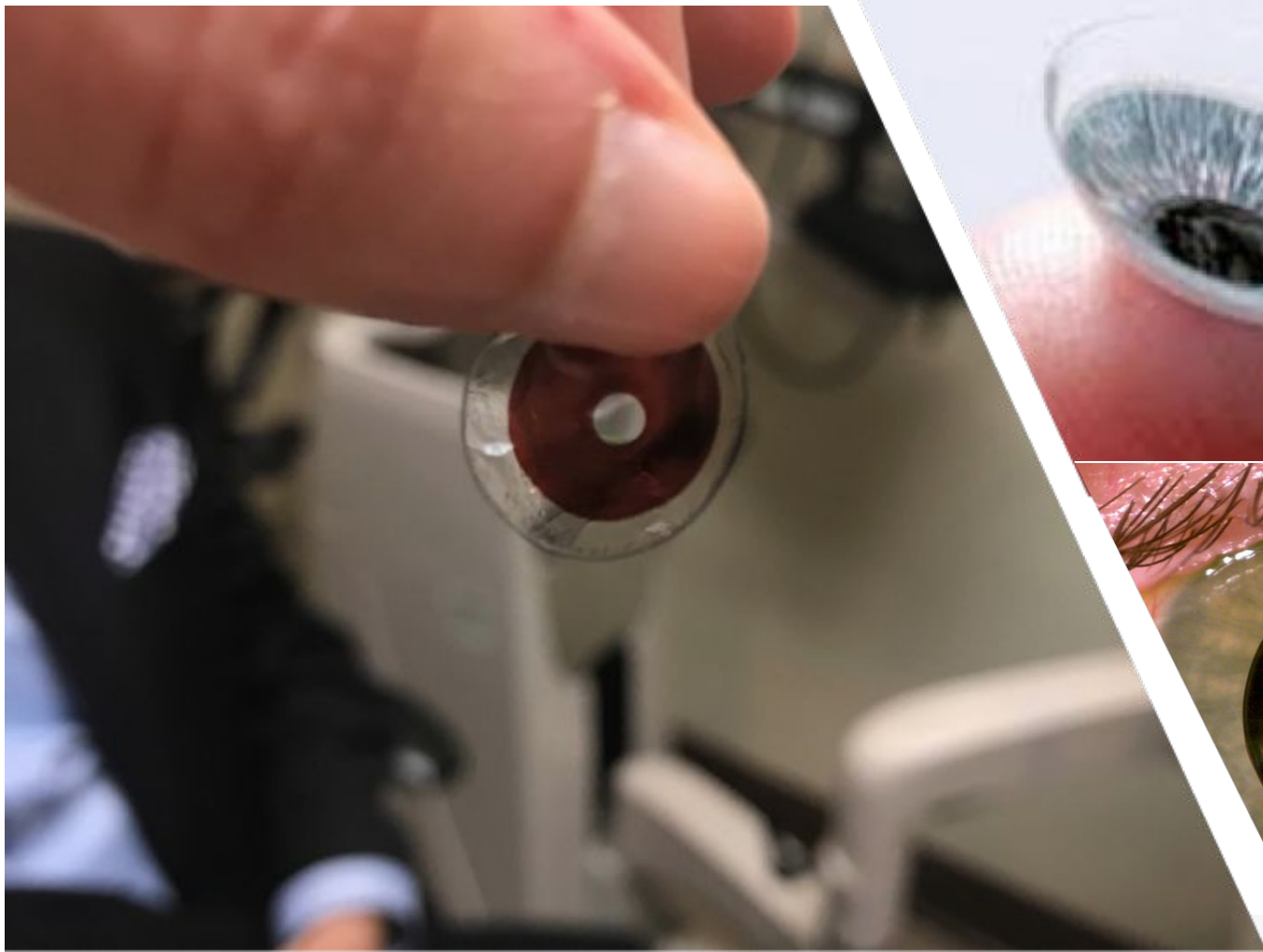
Bausch & Lomb: Specialty Vision Products – Speaker

We've Mastered The Basics

Soft contact lenses

- Myopia / Hyperopia
- Astigmatism
- Multifocal
- Monovision

Let's take it to
another level!



What Can Soft Lenses Do?

- Provide migraine relief
- Decrease light sensitivity
- Cover disfigurements
- Enhance color vision in color deficient patients
- Correct double vision





The Basics You'll Need

An awareness of what is out there!

Accounts with multiple soft contact lens laboratories.
Contact the labs and ask about ALL their options!

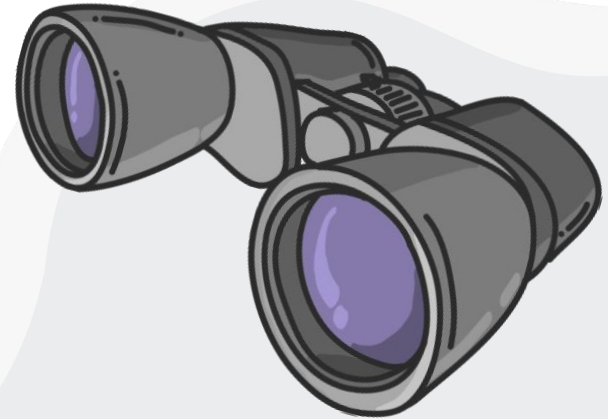
A way to assess corneal shape

Don't Have A Topographer?

Many of these specialty lenses are custom designs.

Many custom lenses are larger in diameter ~14.5

Diagnostic lenses!

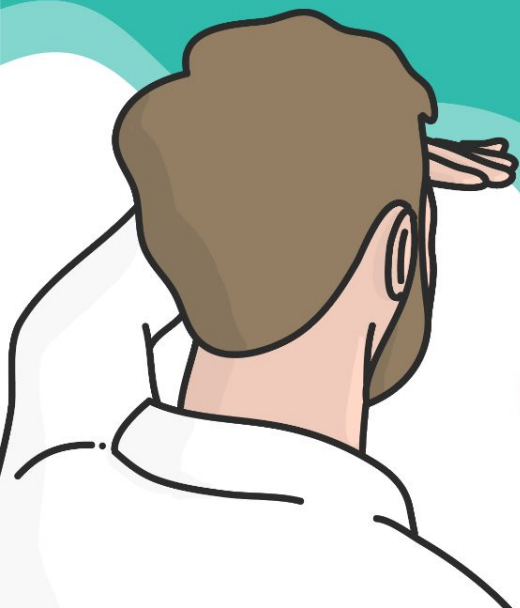




Let's Get Started!

Using Color

(Tints, Painted Iris, Black Pupils)



Color Deficiency

Magenta/Red Tinted Contact Lens

- Chemical for R/G is slightly altered, resulting in color confusion¹
- Contact lens changes the wavelengths of color, enhancing perception and discrimination
- Pass color vision tests²

Gold nanoparticle-based plasmonic color filter lenses³



Normal
color
vision



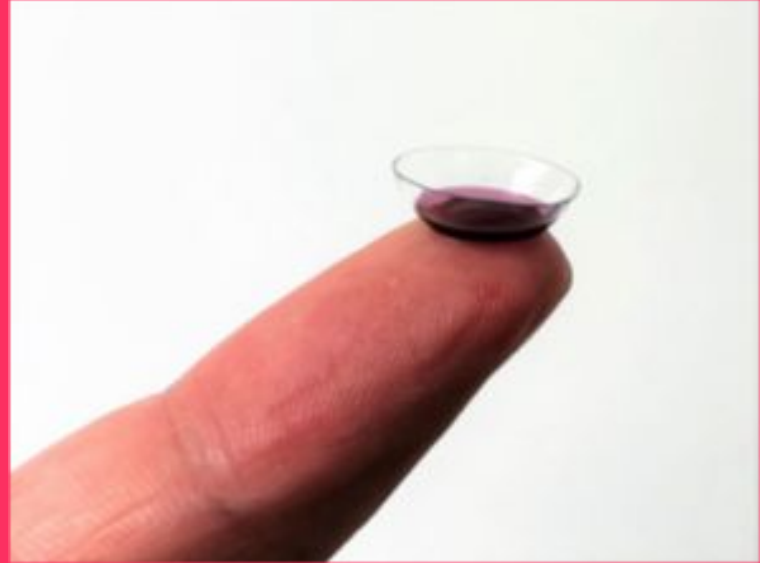
Red-green
confusion,
a form of
"color
blindness"



Migraine Relief

Migraines:

- ipRGC (intrinsically photosensitive retinal ganglion cells)⁴
- Contain melanopsin
- Sensitive to blue light
- Travel through optic nerve
- Converge on brain cells that transmit pain.
- Don't forget other triggers!



Truly Triggered? A Trial.



Tint Parameters

Iris / Pupil Tints



Lavender



Migraine 55



Blue Blocker



Cobolt



Teal



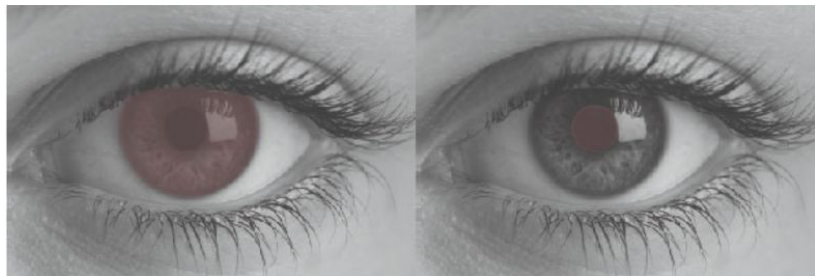
Red

Lavender



- Migraine/Headache relief
- Reduces eye strain
- Photophobia (especially in fluorescent and outdoor lights)

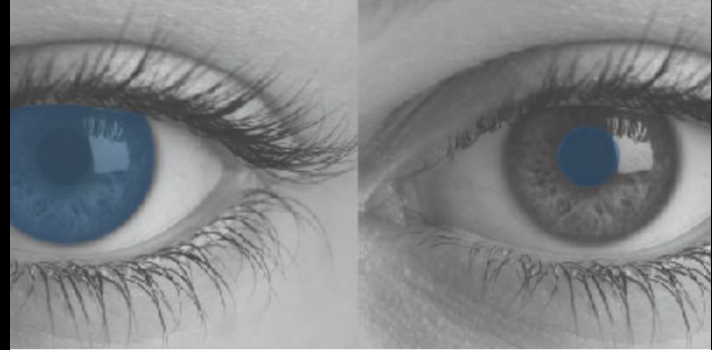
Migraine 55%



- Migraine relief
- Photophobia

Seizure Prevention

Cobolt

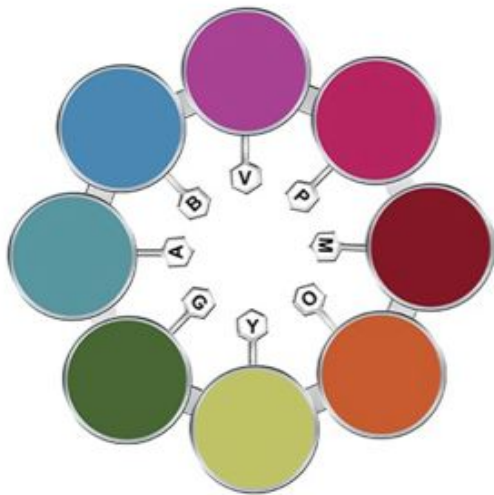


Known to prevent seizures

Reduces glare

Improves color perception and contours

Dyslexia



Tints for Dyslexia

- Reading disorders: problem with magnocellular pathway from eye to brain
- 8 tints
- Equalize visual input into each eye
- FDA approved for management of academic skills disorder

Sports Performance



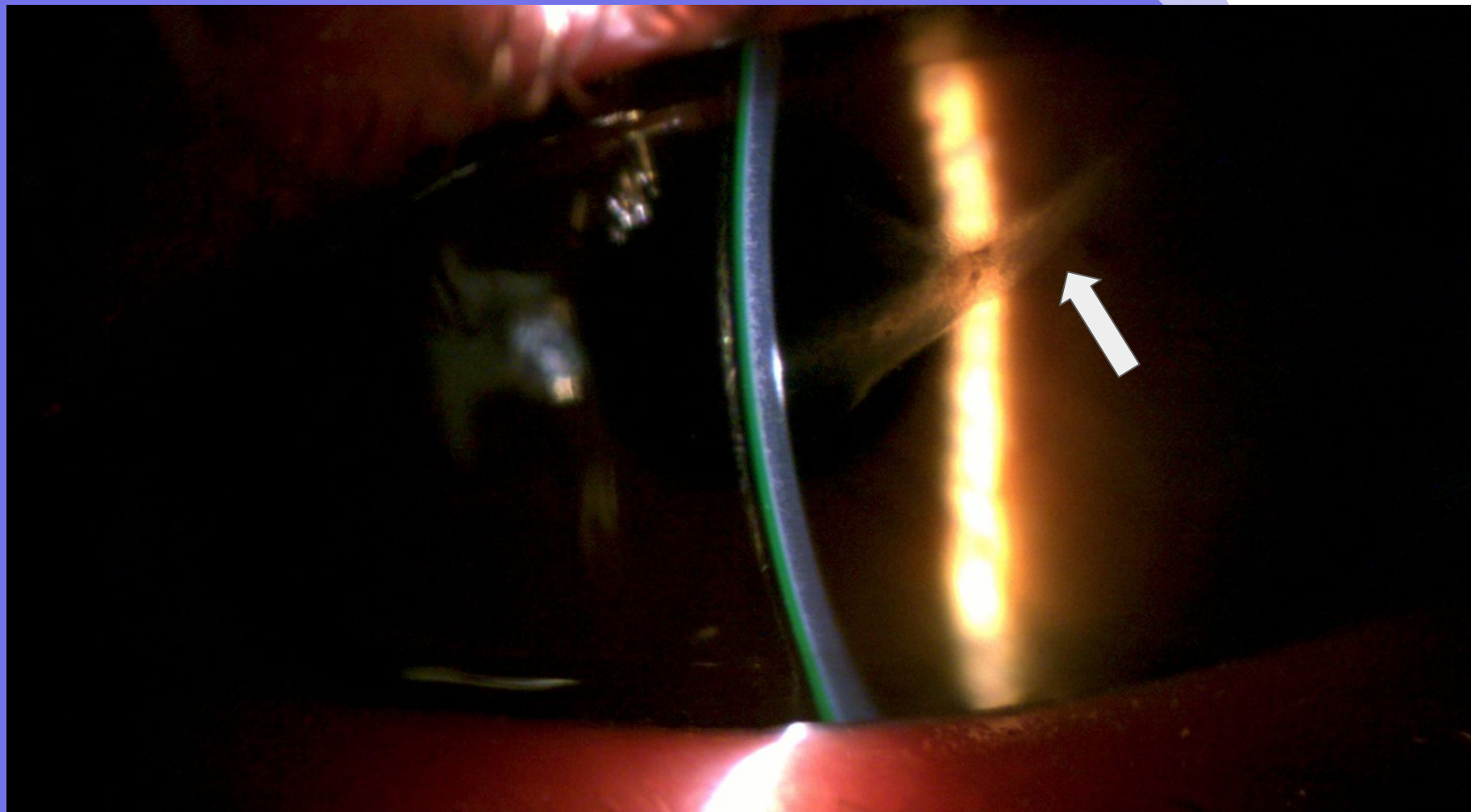
Light

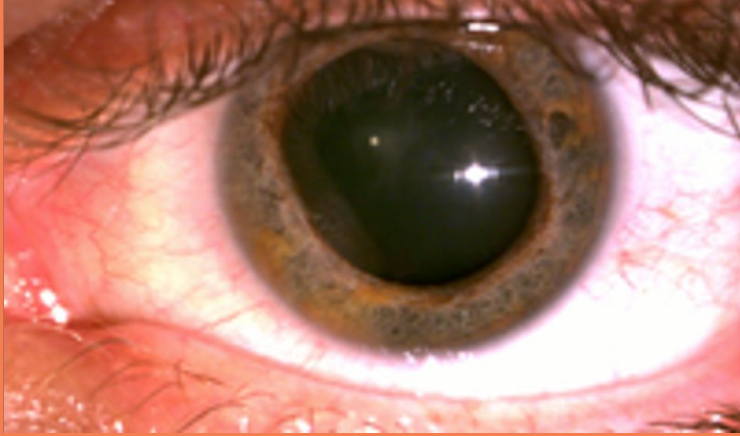
Sensitivity

Light Sensitivity

Why is the patient light sensitive?

- Dry eye
- Corneal irregularity
- Keratoconus
- Aniridia
- Iris defects
- Blown pupil
- Retinal disease

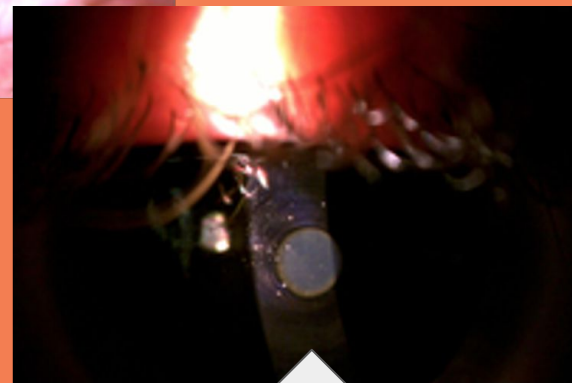
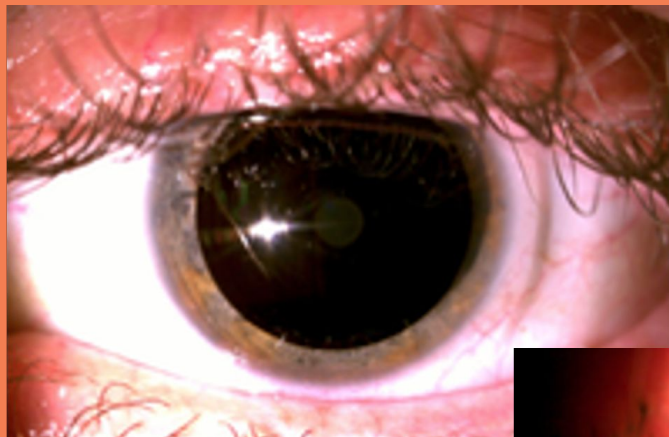
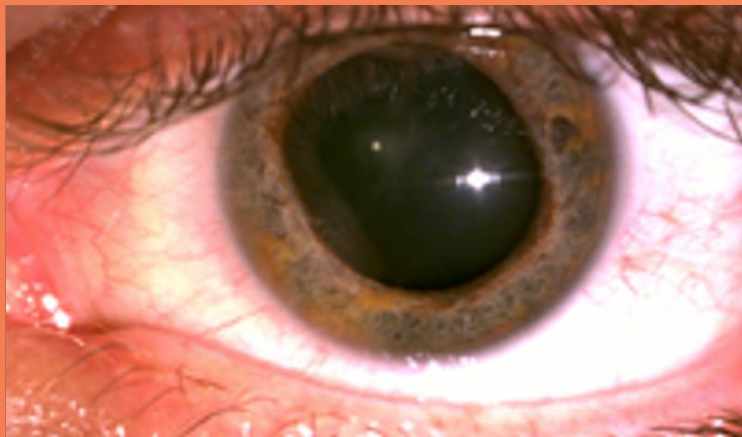




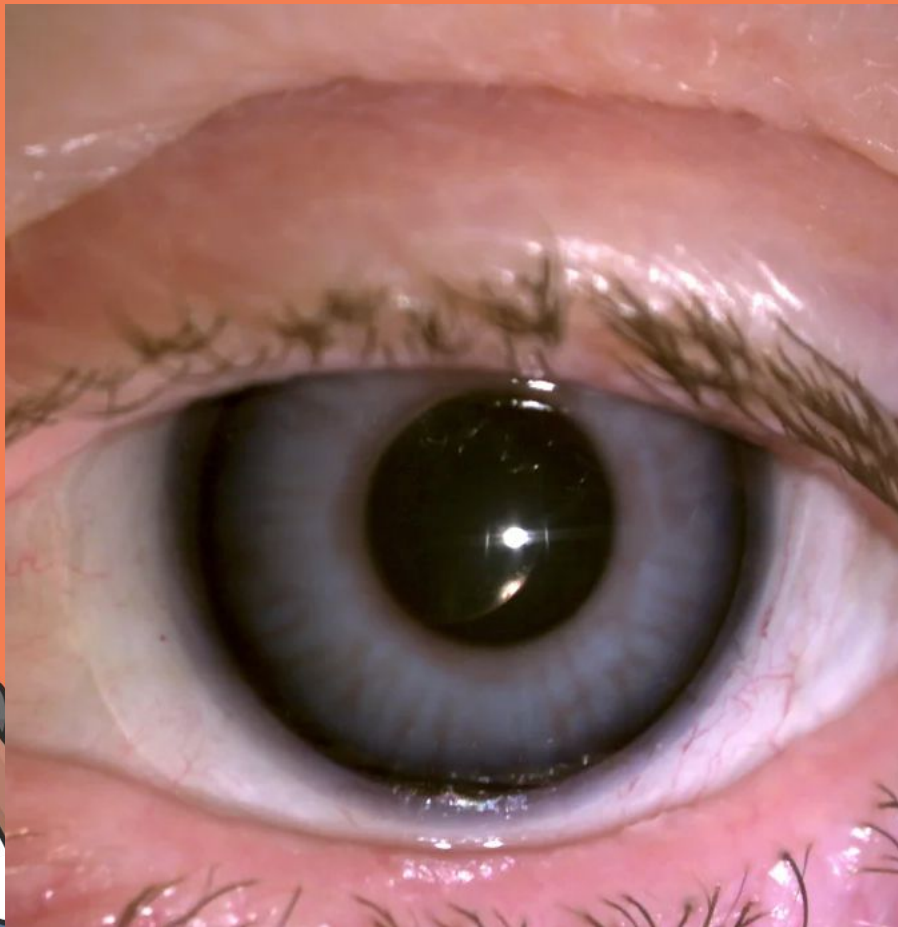
Blown pupil

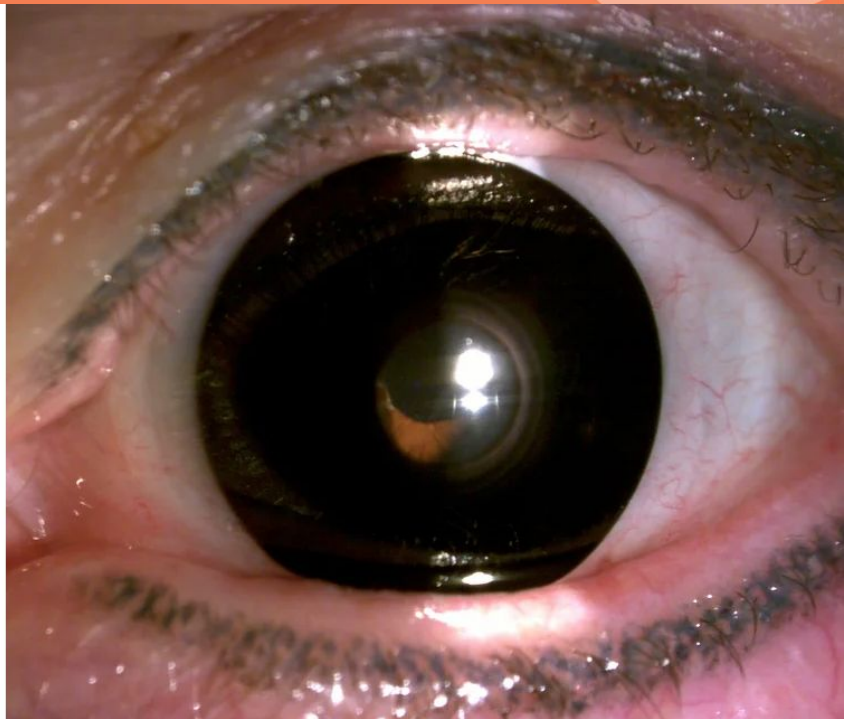
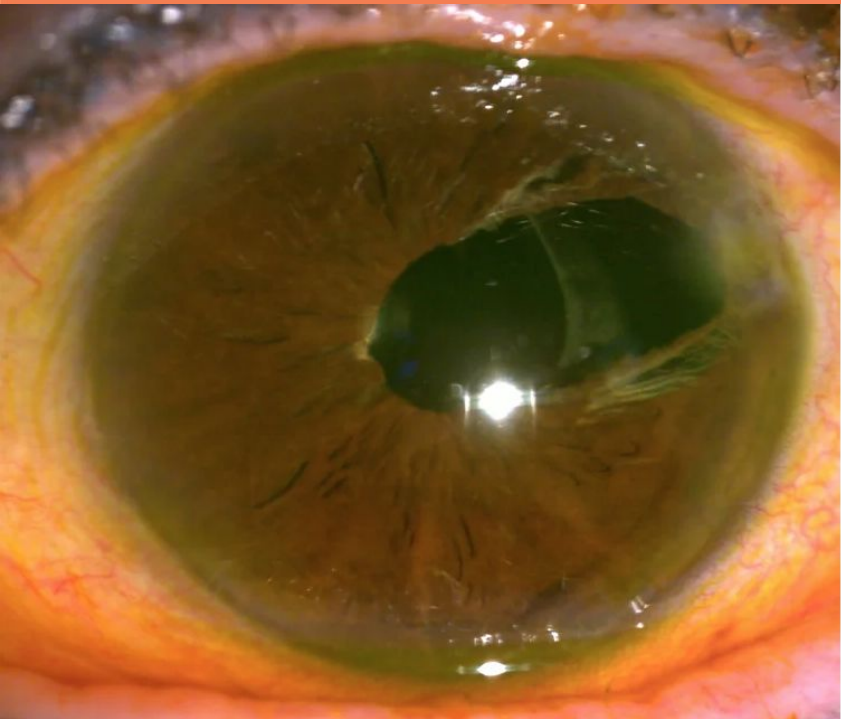
Light sensitivity complaints











Minimizing Disfigurement



Tips for Fitting Cosmetic Soft Contact Lenses:

- Why is the patient's eye disfigured?
- What makes them self-conscious?
 - Pupil size, iris size, small eye, drooping lid
 - Can they still see?
- Taking measurements

Presenting all options

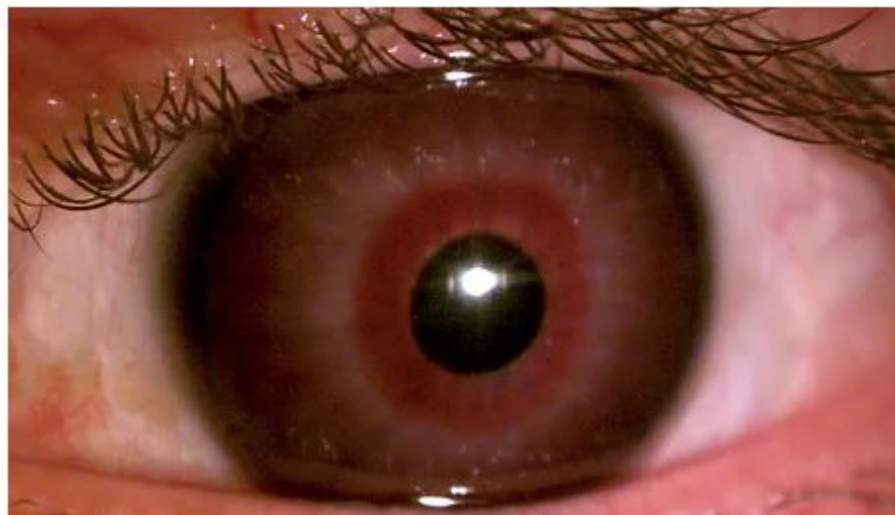


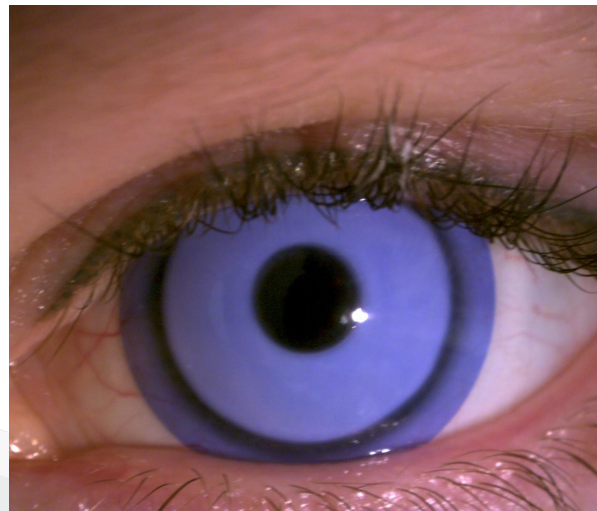


Without Lens



With Lens











Before handpainted Prosthetic Lens



After handpainted Prosthetic Lens

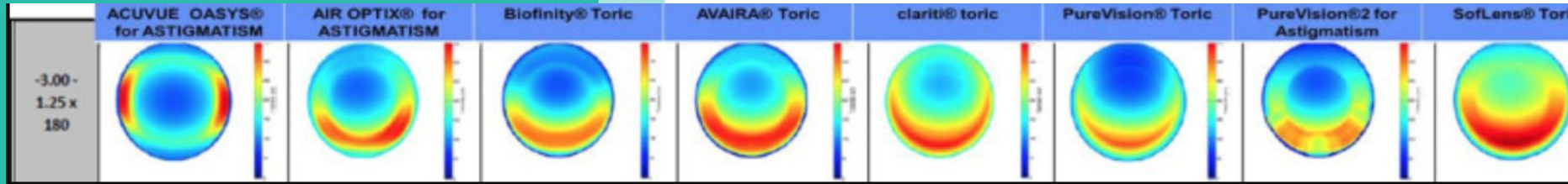


Correcting Double Vision



Correcting Diplopia

- Soft contact lenses can only correct vertical diplopia
- Wear lens on the eye that needs BASE DOWN prism
- 4.0 PD base down maximum
- Conventional toric contact lenses vs. special order
 - Under 1.0 PD = conventional worn on one eye
 - Over 1.0 PD = specialty order

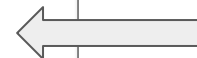


Stabilization Methods⁵

- Prism-ballast
- Peri-ballast
- Thin-zone designs
(dynamic stabilization)

Table 2 Descriptive statistics of vertical prism for reusable toric contact lenses.

	<i>N</i>	Mean vertical prism (Δ)	Std dev vertical prism (Δ)	Median vertical prism (Δ)	Min vertical prism (Δ)	Max vertical prism (Δ)
ACUVUE OASYS [®] for ASTIGMATISM	8	0.0085	0.01084	0.0065	-0.0081	0.0229
AIR OPTIX [®] for ASTIGMATISM	8	0.5245	0.07581	0.5288	0.4040	0.6331
Avaira [®] Toric ^a	6	0.7471	0.03498	0.7393	0.7077	0.7956
Biofinity [®] Toric	8	0.7742	0.05107	0.7598	0.7249	0.8399
PureVision [®] Toric	8	1.1467	0.09530	1.1367	1.0339	1.3135
PureVision [®] 2 for Astigmatism	8	0.9591	0.08115	0.9579	0.8539	1.0761
clariti [®] toric	8	0.8471	0.05847	0.8401	0.7827	0.9337
SofLens [®] Toric	8	0.8095	0.08799	0.7937	0.7055	0.9781



First Case

1.0 BD PD OS straight ahead
2.0 PD OS when looking
down

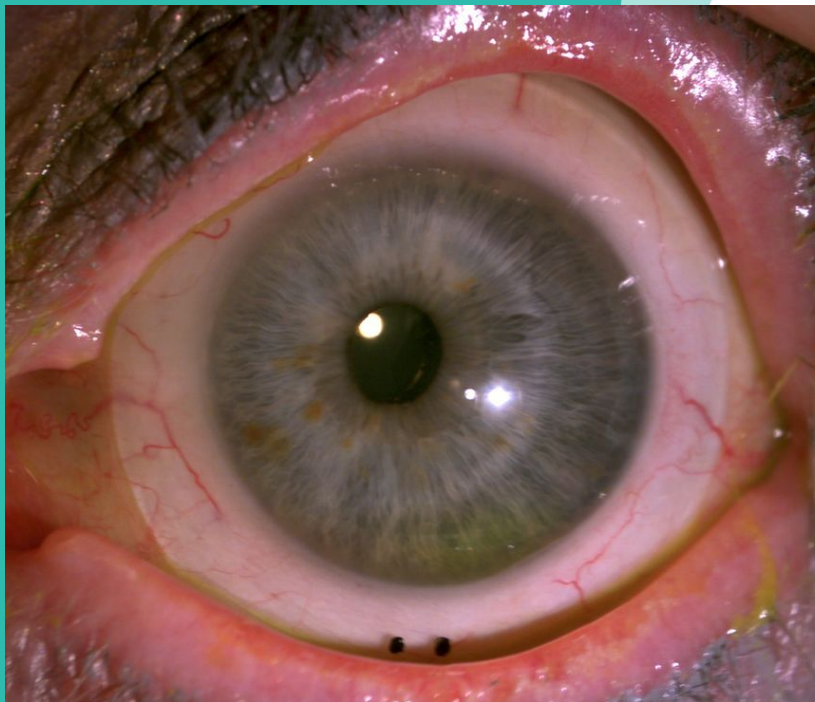
Satisfied with conventional
soft toric lens on the left eye

Second Case

5.0 PD BD OD, more
noticeable when looking
down

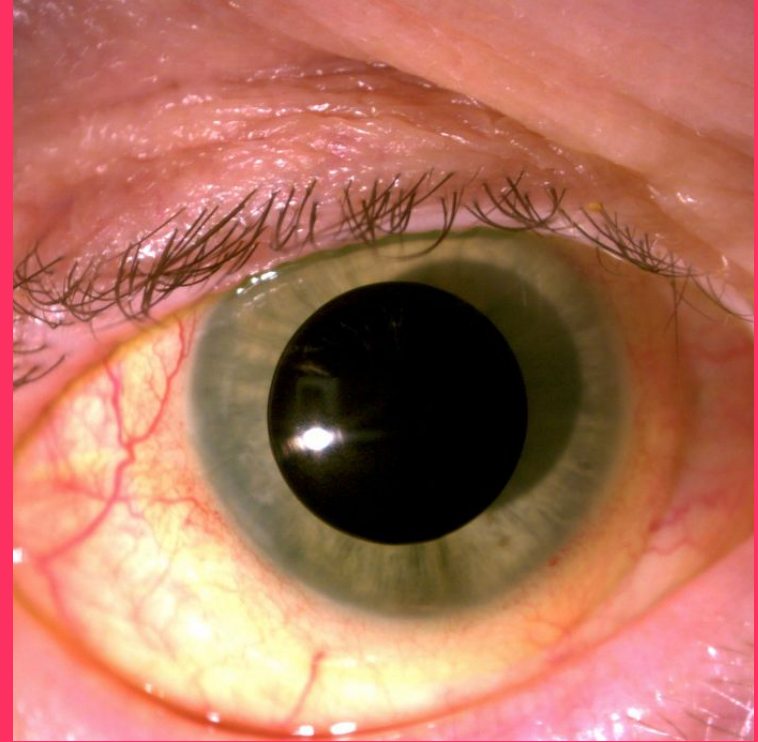
4.0 PD BD custom contact
lens

Horizontal prism can be
incorporated into scleral lenses



Diplopia - Intractable

Soft prosthetic
contact lens with
occlusive pupil



- 1.) “Enhancing Patient’s Lives: Increasing Comprehension Improving Colours”. ChromaGen Europe. Chromagen.us. The Netherlands.
- 2.) Oli A, Joshi D. Efficacy of red contact lens in improving color vision test performance based on Ishihara, Farnsworth D15, and Martin Lantern Test. Med J Armed Forces India. 2019 Oct; 75(4): 458-463.
- 3.) Ro G, Choi Y, Kang M et al. Novel color filters for the correction of red-green color vision deficiency based on the localized surface plasmon resonance effect of Au nanoparticles. 2019 Oct 4; 30(40).
- 4.) Nosedá R, Bernstein C, Nir R-R et al. Migraine photophobia originating in cone-driven retinal pathways. Brain. 2016 Jul;139(7): 1771-1986.
- 5.) Hawke R, Lorenz K, Toubouti Y et al. Resultant vertical prism in toric soft contact lenses. Contact Lens & Anterior Eye. 38(4): 253-257. 2015.



Thank You!

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