



Presbyopic Implant in Eye (PIE)

Liberate your vision

Presenter : Dr. Rajesh Khanna
Khanna Vision Institute

➤ Bio

➤ Dr. Rajesh Khanna

➤ Dr. Rajesh Khanna is a renowned Eye surgeon in California. He has performed over ten thousand vision correction surgeries over his career. He has been recognized as one of the top LASIK and prelex surgeons in USA. He has been the eye surgeon of choice for Doctors , Nurses and celebrities.

➤ Dr. Khanna is certified by the American Board of Ophthalmology. He has Advanced Fellowship Training in LASIK and Refractive Cataract Surgery. He is the founder and Director of Khanna Vision Institute.

➤ Dr. Khanna volunteers at UCLA Jules Stein Eye Institute. He devotes his time in charitable activities. He enjoys playing tennis and field hockey.



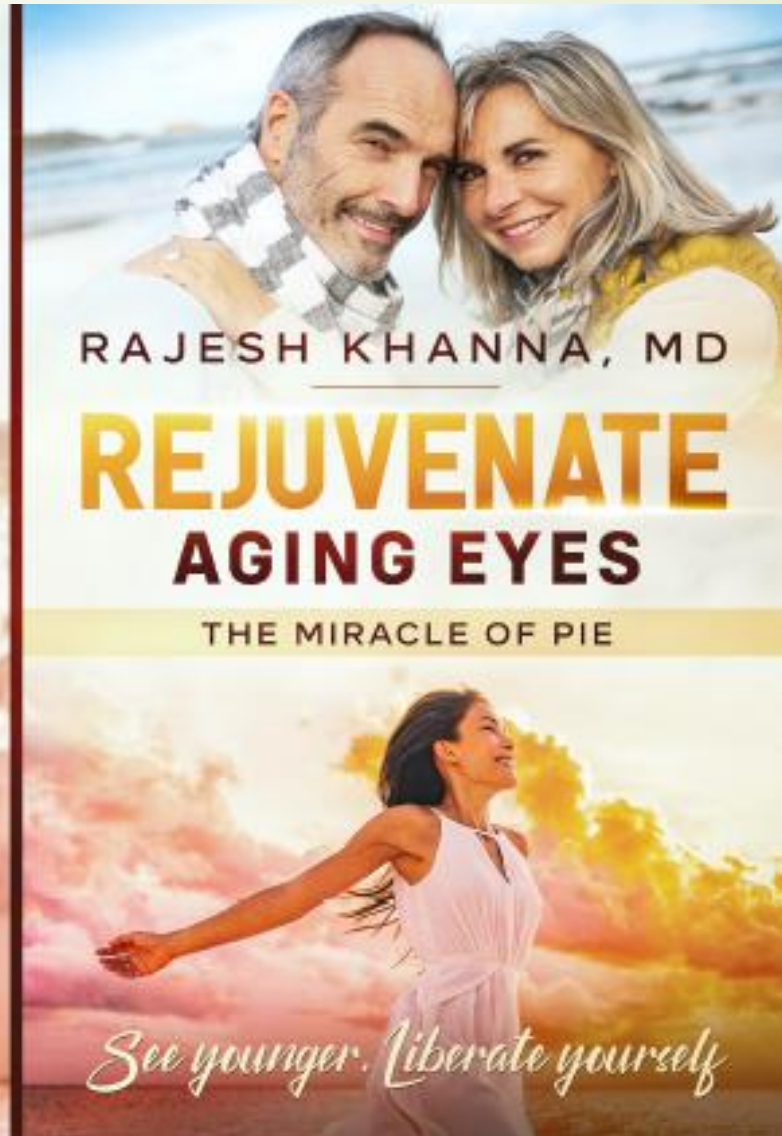
REJUVENATE AGING EYES

Imagine having the vision of your younger self. Imagine throwing away your contacts, progressives, and readers because you now have 20/20 vision that even continues to improve through the years. To have a reversal of the aging process and even preventing cataracts from ever hindering your new vision. This ground-breaking advancement is called Presbyopic Implant in the Eye (PIE).

Dr. Khanna has not only coined the term PIE but has been a pioneer in the industry. He has conducted numerous lectures on the topic, provided personal coaching to upcoming surgeons and is the founding Medical Director of Khanna Vision Institute. He has authored numerous educational books which have aided in the popularity of this life-changing procedure.



Dr. Khanna takes great pride in educating the medical community as well as anyone that suffers daily with diminishing vision. His goal is simply to bring awareness to the world through written word, video lectures, live seminars, educational and medical apps, as well as educating and connecting with his current surgical case load. As an active PIE surgeon, he has performed thousands of procedures on patients extending throughout the globe.

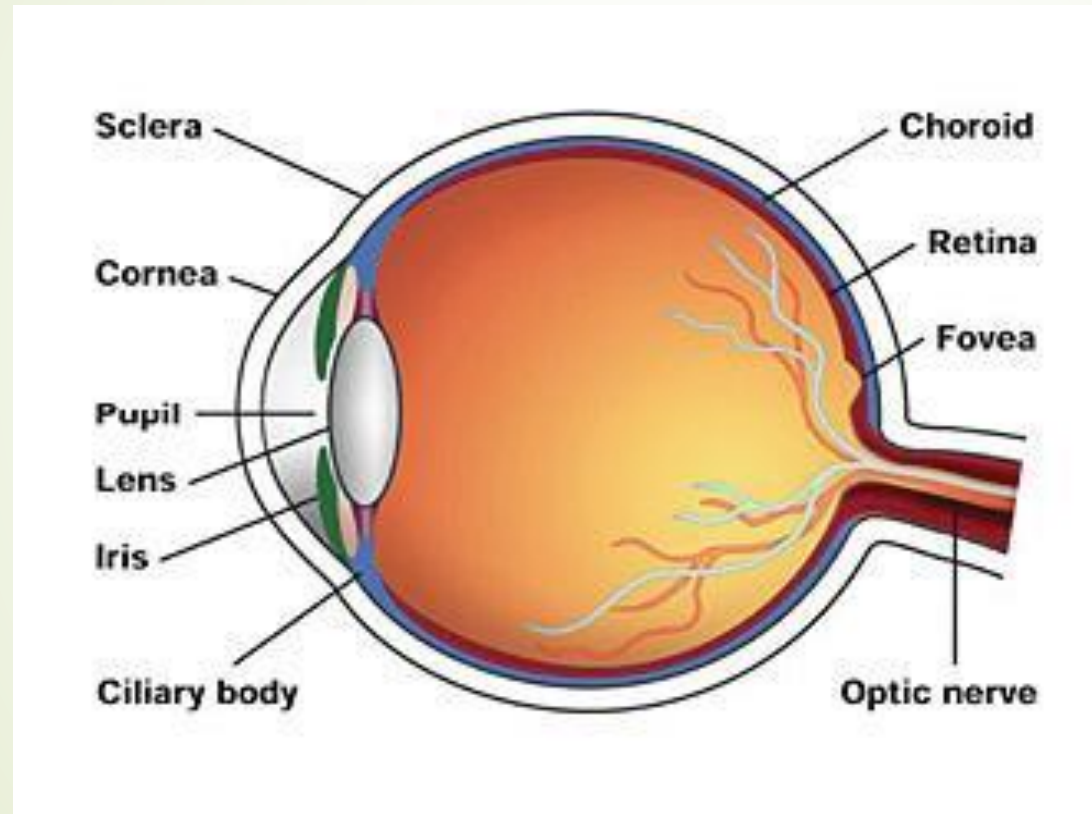


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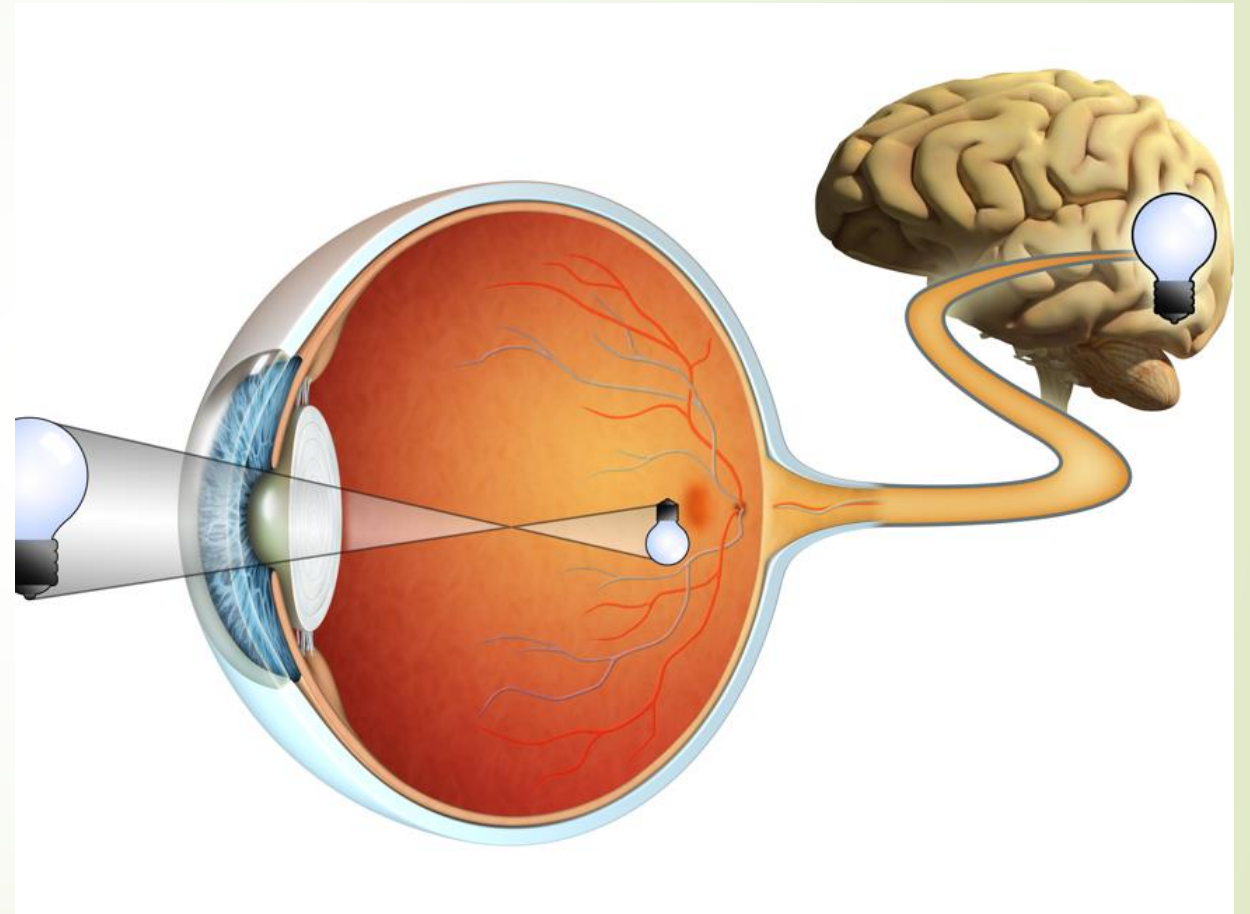
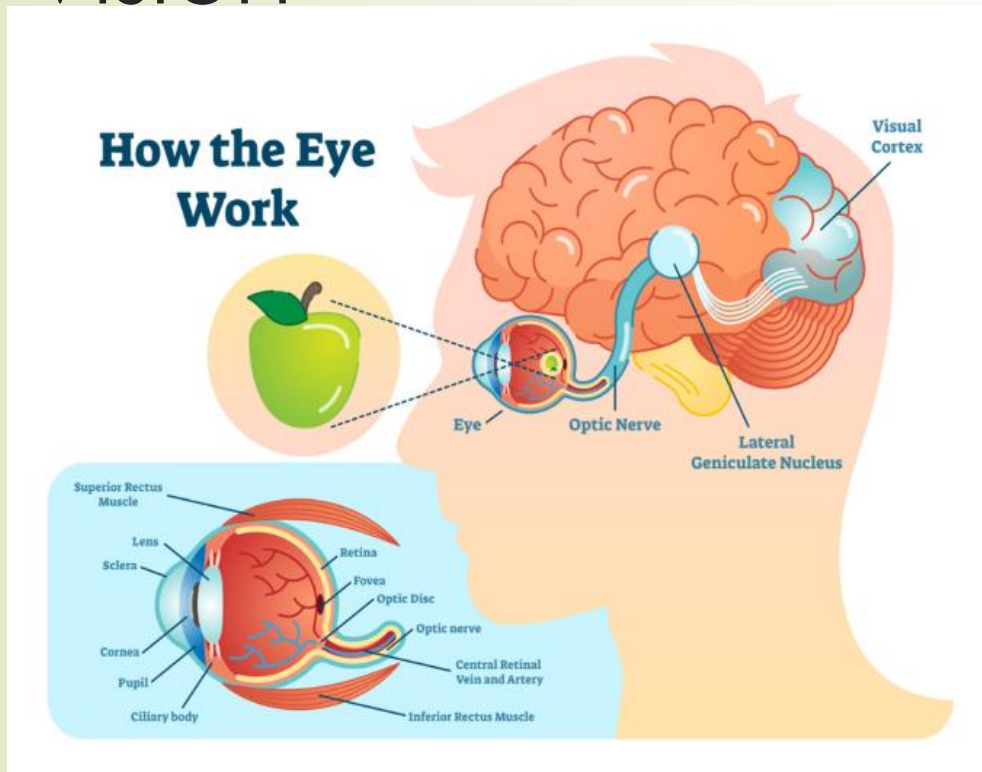
Important Links:

- ▶ Book – Rejuvenate Aging Eye :
<https://www.amazon.com/dp/B08BG74NS2>
- ▶ Khanna Vision Institute <https://khannainstitute.com/>
- ▶ Recording of this Lecture :
<https://ieeemeetings.webex.com/webappng/sites/ieeemeetings/recording/play/0348181739094baf95d7e60751f11742>

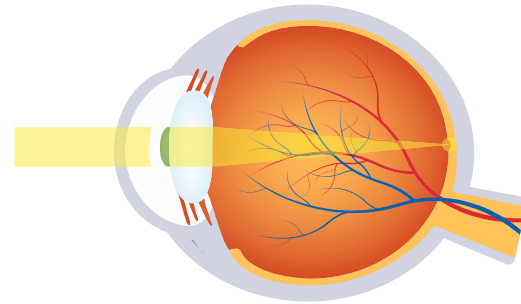
Structure of Eye



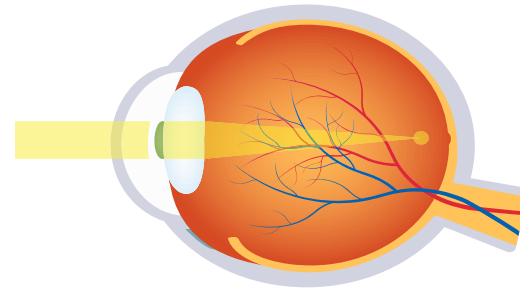
Understanding Vision



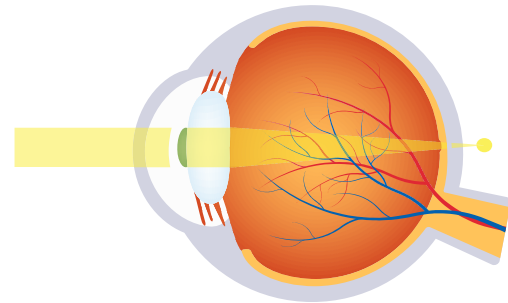
VISION DISORDERS



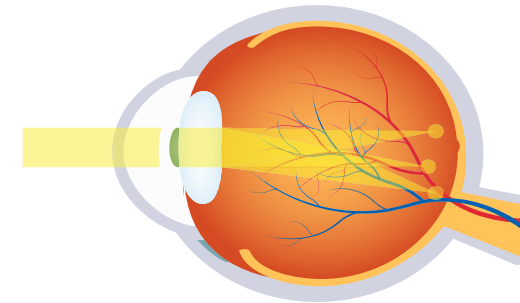
Normal vision



Myopia

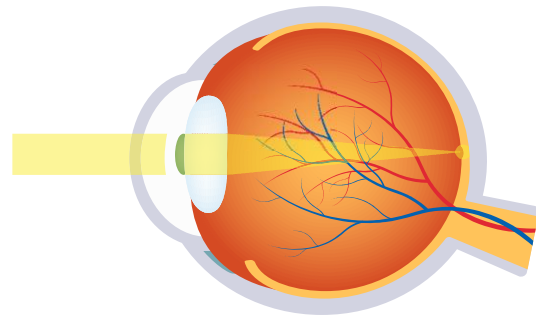


Hyperopia

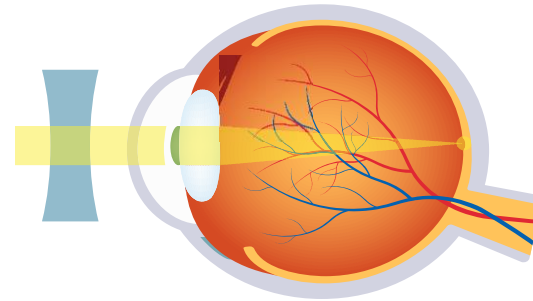


Astigmatism

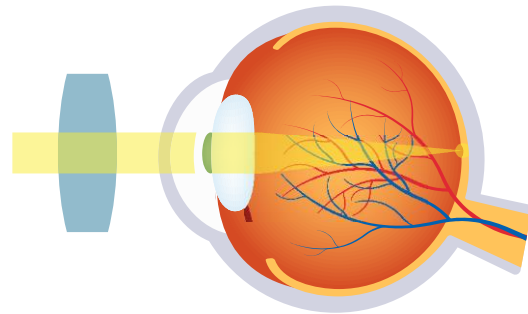
CORRECTION OF VISION DISORDERS



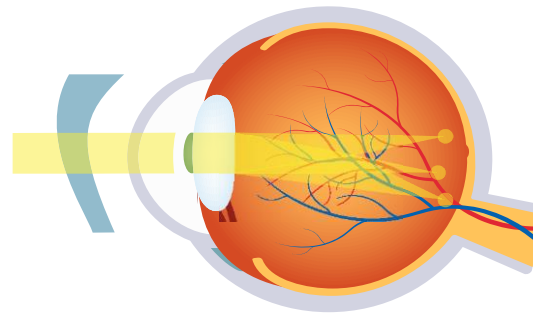
Normal vision



Myopia



Hyperopia



Astigmatism

Zones of Vision

- Near
- Middle
- Far





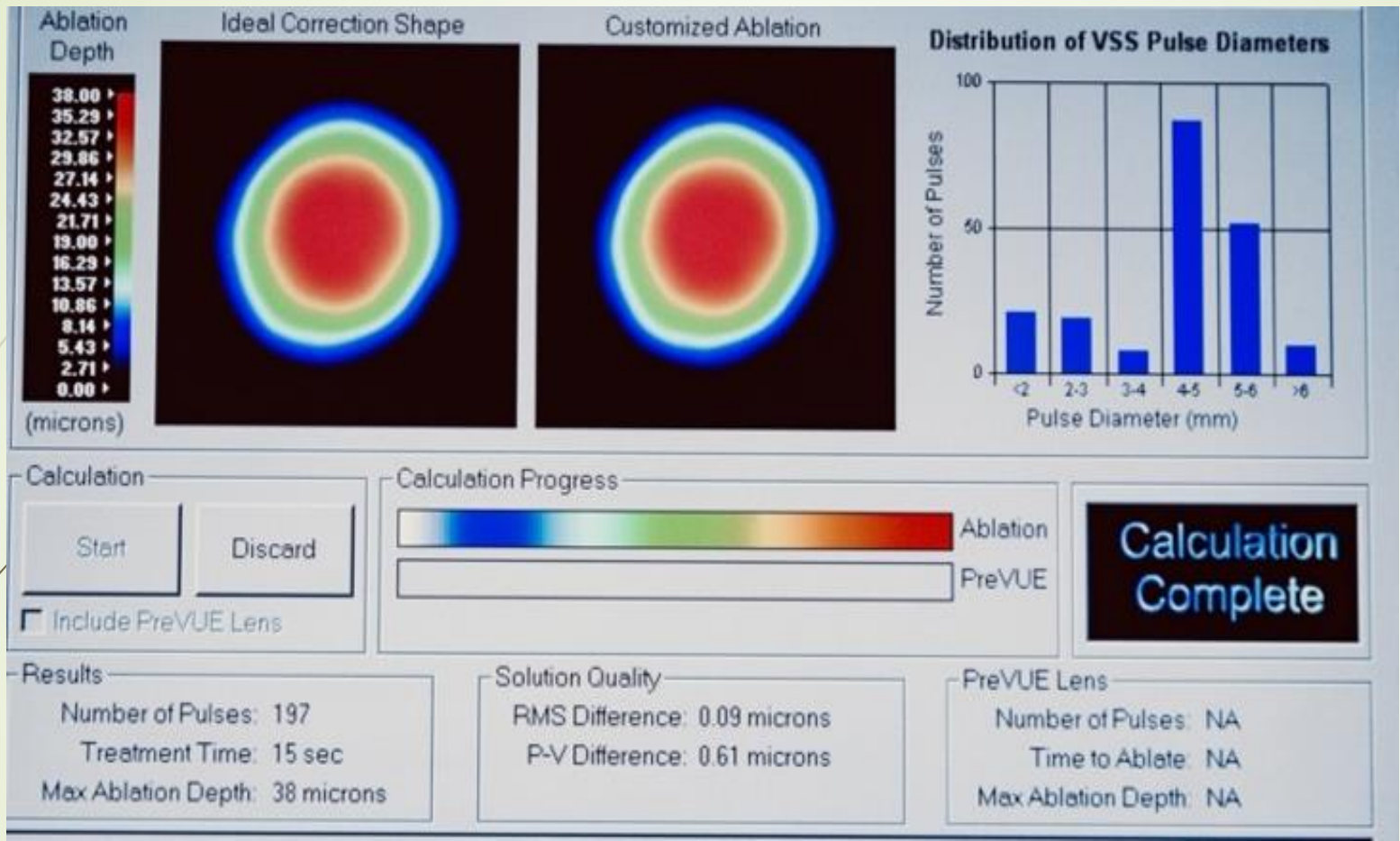
Lasik Eye Surgery

- ▶ **Lasik is a type of eye surgery in which an extremely precise computer controlled laser is used to reshape the corneal surface so as to fix irregularities that have impaired your vision. The cornea is the clear front part of the eyeball. Lasik eye surgery corrects: Nearsightedness (myopia), Farsightedness (hyperopia) and Astigmatism. It does not correct presbyopia**

Calculate Treatment

- Amount of tissue removed
- Remaining tissue
- Edge of pupil and limbus

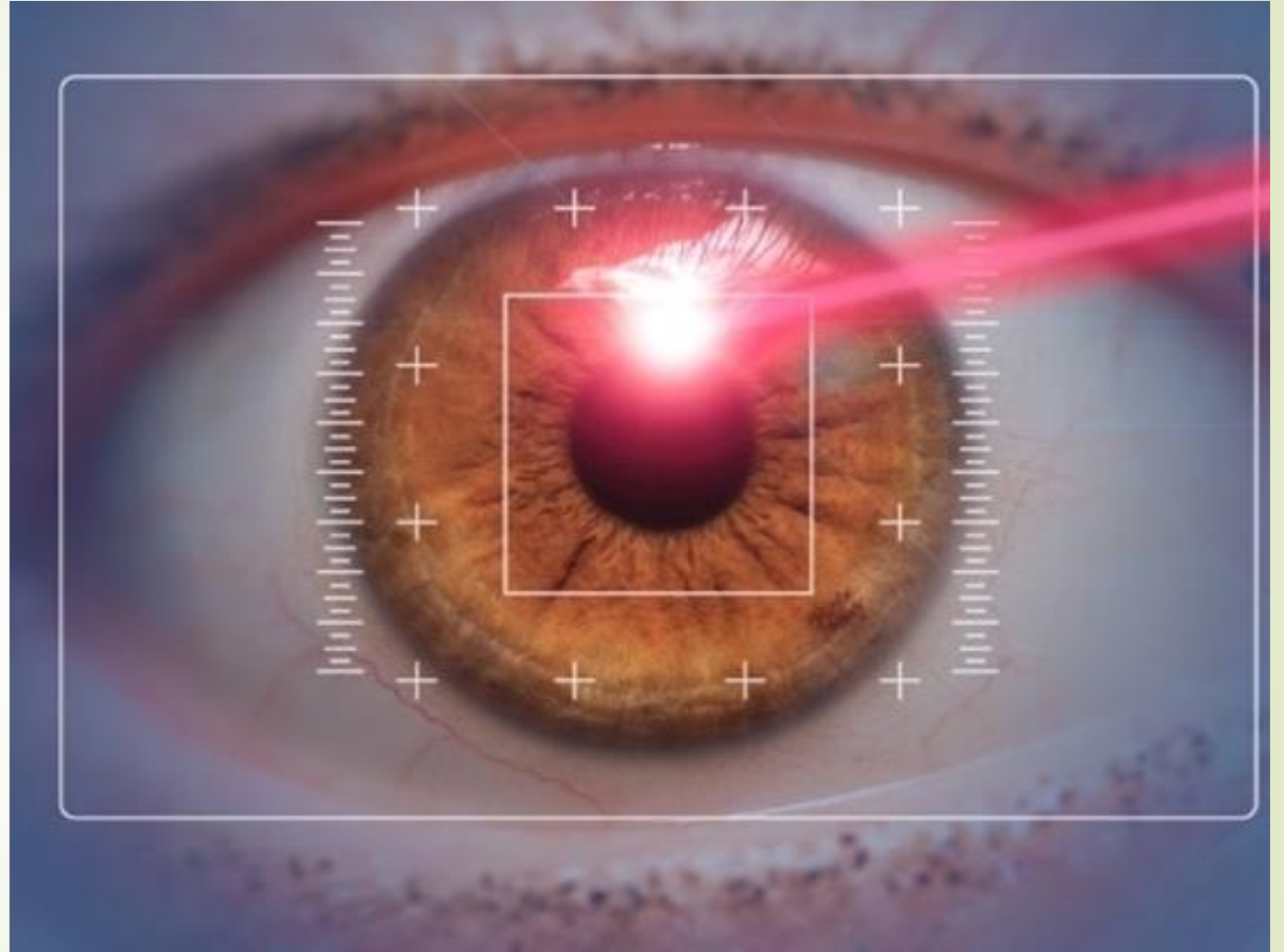




Treatment profile

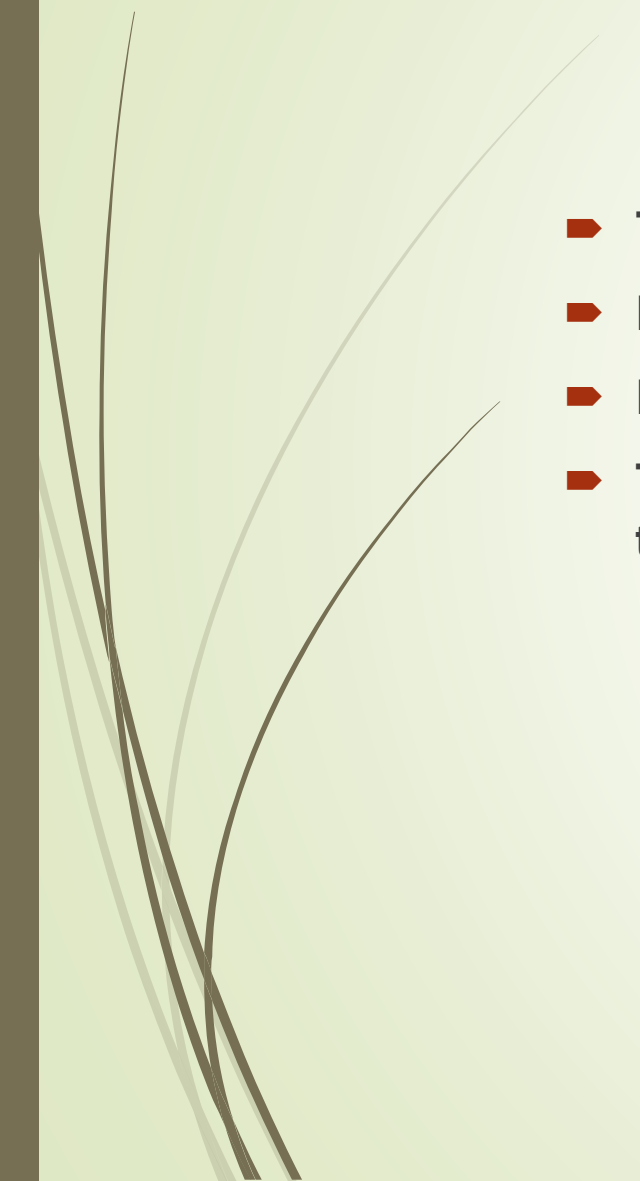
Laser beam reshaping the cornea.

- ▶ Myopic astigmatic lasik
Central 6.5 mm optic zone
1.5 mm blend zone
- ▶ Hyperopic Lasik till 9mm
groove to allow cornea to
bulge forward





PIE - Cure Presbyopia Permanently

- ▶ **The expanded form of PIE is “Presbyopic Implant in Eye”**
 - ▶ **Presbyopia is a natural change beginning in the forties**
 - ▶ **Presbyopic, in the term means that it cures presbyopia**
 - ▶ **The implant is a newer synthetic biocompatible lens placed in the space of the remaining natural lens.**
- 

Quality of Vision Questionnaire

Name: _____

Date: _____

This Questionnaire assists us in providing the best biocompatible lens for your PIE (Presbyopia Implant in Eye) surgery. Please understand, though PIE allows freedom from glasses, some patients may require glasses in certain conditions. Please circle all that apply

Do you suffer from any of the following conditions? Diabetes mellitus, Macular degeneration, Glaucoma. Any other? _____

Symptoms: Have you had difficulty with: Reading medication instructions newspaper or food labels, fill out forms, watch TV, work, sewing, needlework, crafts, playing golf, tennis, cards, swimming & games. Y N

Have you been bothered by: Poor night vision seeing rings around lights, glare, seeing in poor/dim light, blurry vision, driving at night, have you had any driving accidents? Y N

Are you responsible for the care of others at home? Y N Do you work at night? Y N
Do you play contact sports? Y N

How is your vision without your glasses or contacts now? Very Bad, Bad, Good

Zone 1	Zone 2	Zone 3
Reading	Computers	Driving
Sewing	Smartphone	Golfing
Applying make-up	Cooking	Cycling
Crossword puzzles	Reading labels on shelf	Watching movies/TV

Which zone of vision is most important to you? Please choose only one

Zone 1 Zone 2 Zone 3

If required for which zone would you be willing to wear glasses?

Zone 1 Zone 2 Zone 3

How important would it be for you to be free from glasses for your daily activities?

____ Very Important ____ Moderately Important ____ Not Important

Please place an "X" on the following scale to describe your personality as best as you can:

Easy going

Perfectionist

How do you expect PIE procedure to improve your quality of life? _____

Patient Signature: _____

PIE

Distance, middle & near vision

Permanently glasses free

Binocular vision at all distances

**Thin, thick or keratoconus
cornea**

Avoids dry eyes

**Can be performed in extreme
nearsighted eyes**

**Can be performed in high
hyperopes or farsighted eyes**

**Can be performed over
previous Lasik, RK, PRK**

Prevents future cataracts

Lasik

Distance, middle or near vision

Need for glasses by age 45

Not above age 45

Contraindicated

Causes dry eyes

No

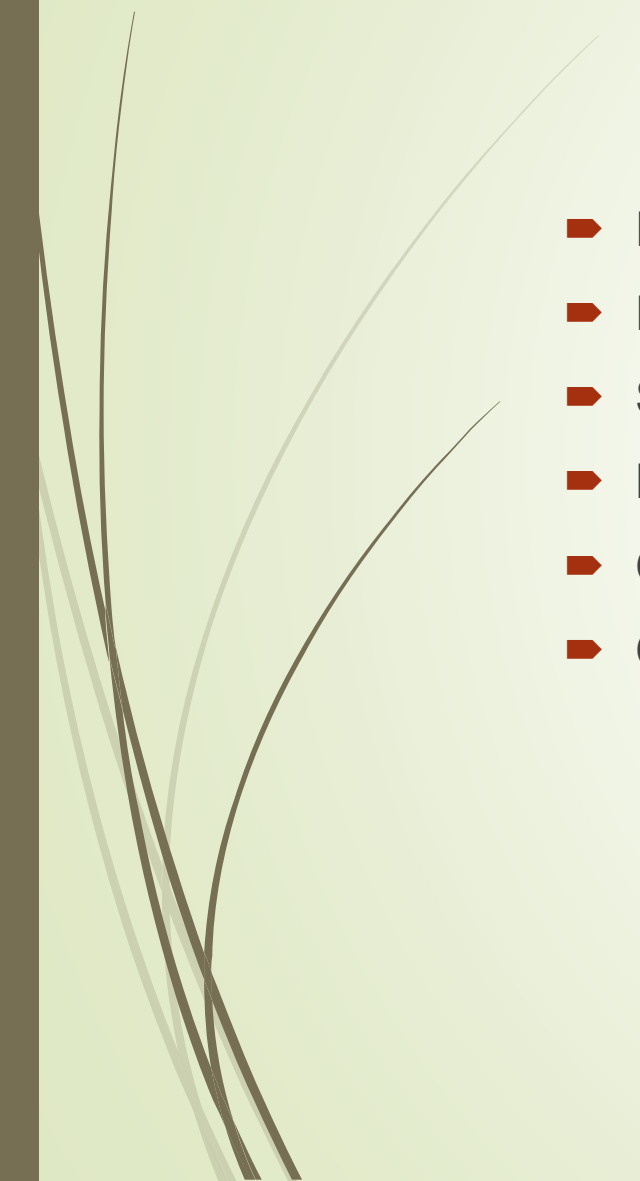
No

Avoided

No



Advantages of PIE

- **Permanent**
 - **Reversible**
 - **See at all distances in each eye**
 - **Neuroadaptation allows vision to improve for many years**
 - **Can be performed after Lasik, RK and previous surgeries**
 - **Can Cure Amblyopia**
- 



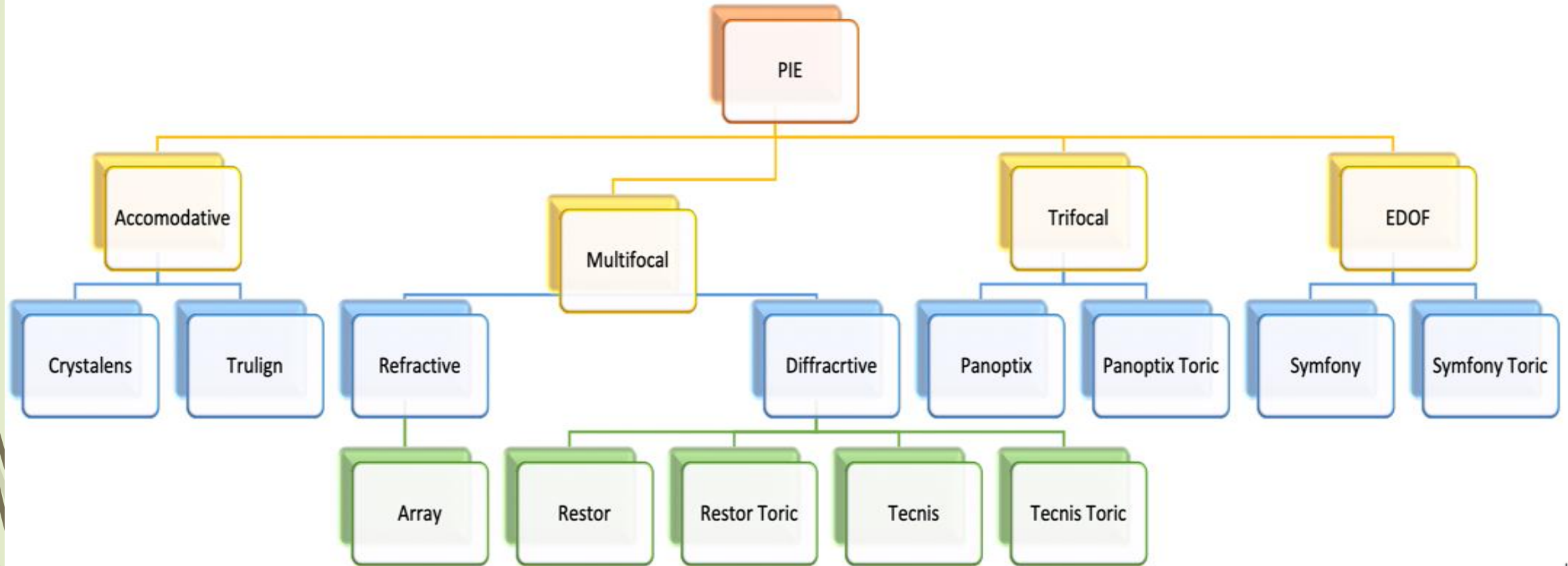
Summary of a good PIE consultation

- Review of medical and visual history
- Check vision, refraction, and auto refraction
- OCT of macula and nerve
- Corneal topography to analyze shape of the eye
- Pachymetry to measure the thickness of the cornea
- Slit lamp: to observe tear film, cornea, and lens
- Intraocular pressure to rule out glaucoma
- Dilated exam to rule out pathologies like diabetes, hypertension, glaucoma, and macular degeneration
- Axial length measurement of the eye
- Explanation on eye model, visual charts
- Get a chance to talk to the surgeon
- Patient testimonials are important to read and will verify the doctor's intelligence and proficiency
- Optional tests like visual field

PIE Procedure



Choosing the Best Presbyopic Implant

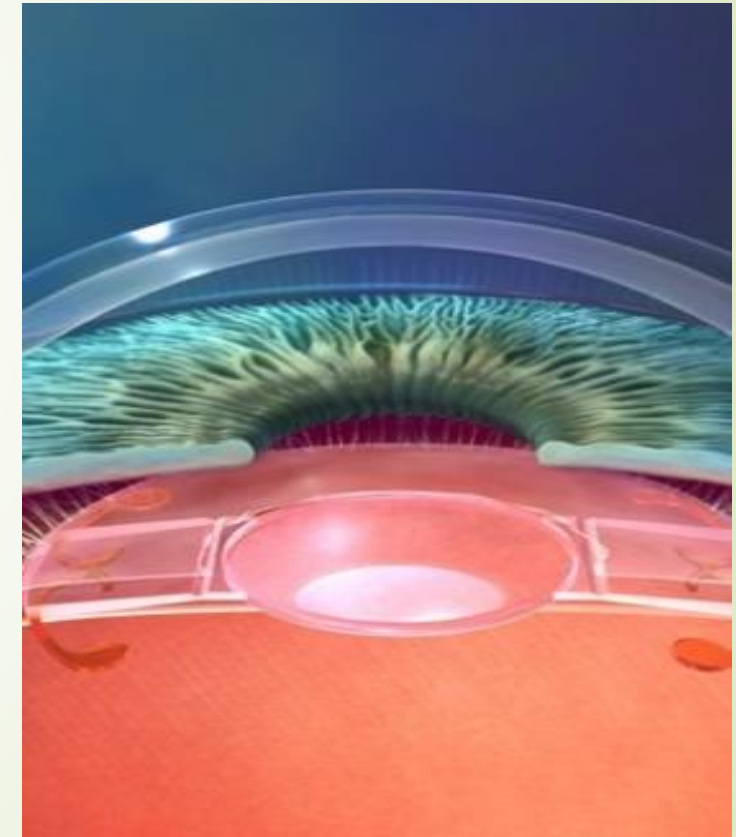
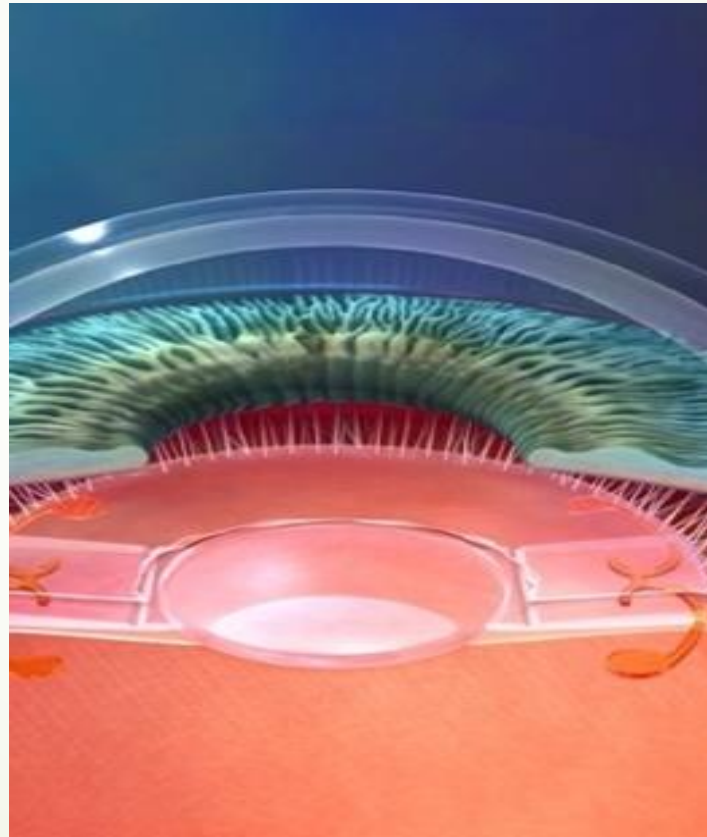
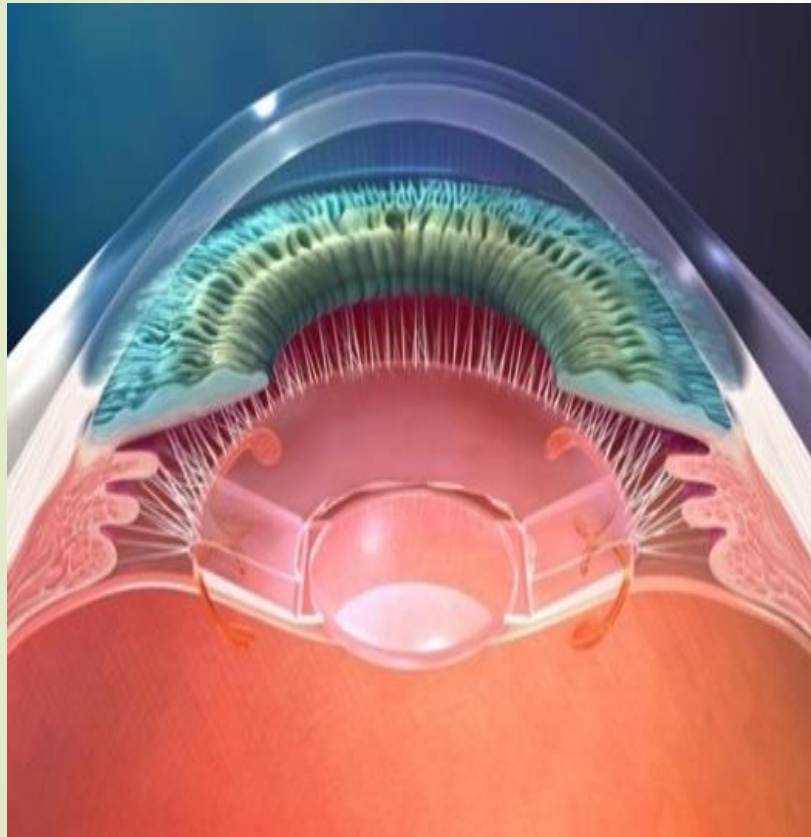


Accommodative crystalens

bowed posteriorly

normal position

bowed anteriorly





Restor



Tecnis



Panoptix



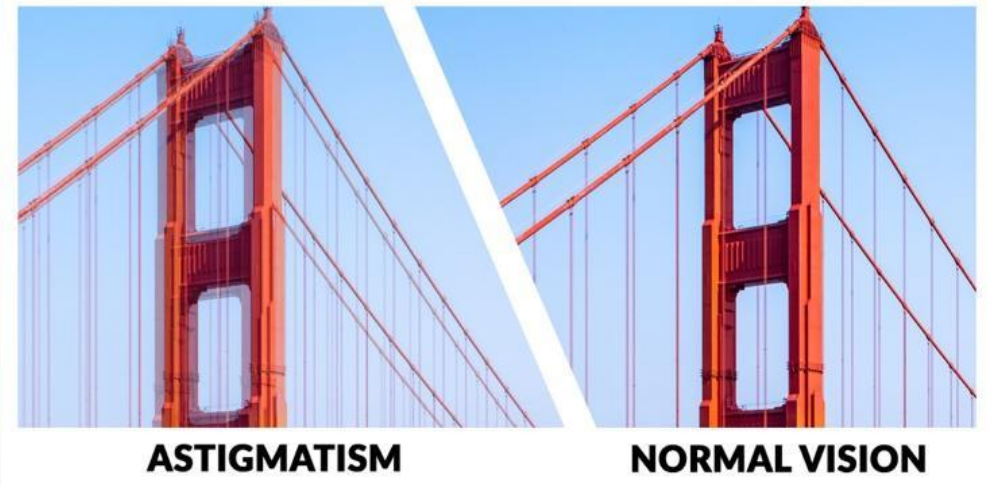
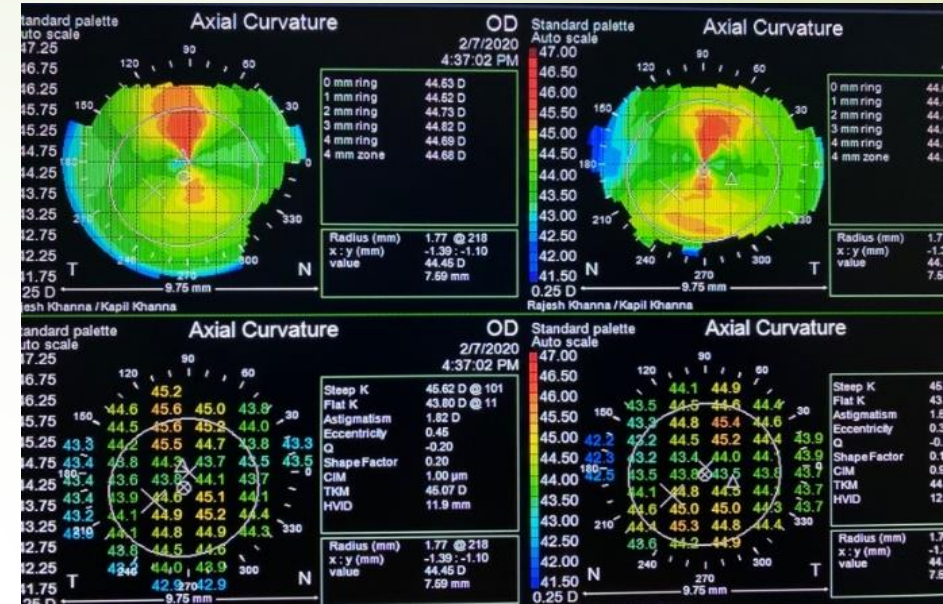
Neuroadaptation & Fine-Tuning

- ▶ Left side focused on distance makes the thumb blurry.
- ▶ Right side focus shifted to the thumb to make it clear causes distance details to become blurry.



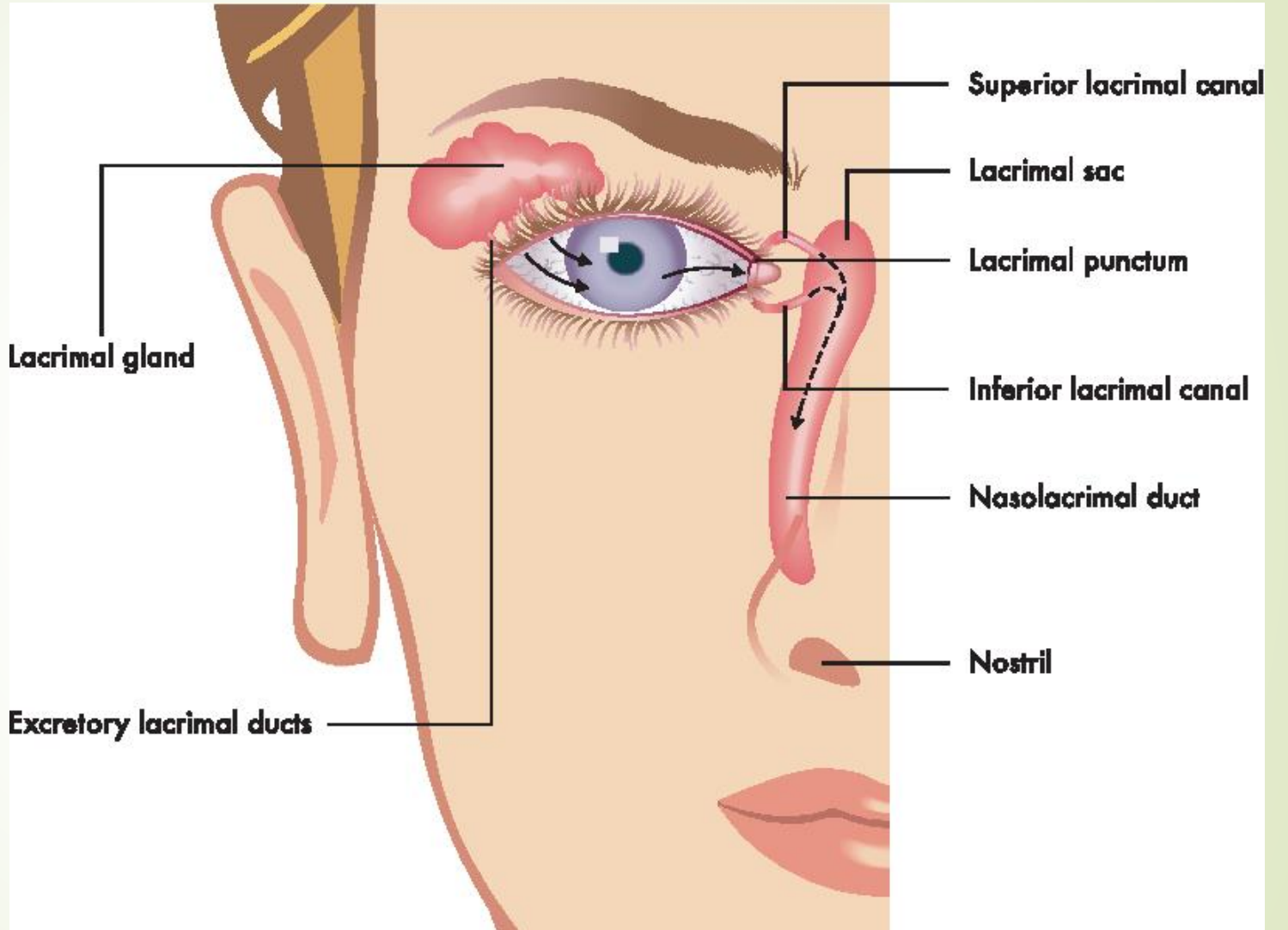
Astigmatism Management

- iDesign Lasik cures it
- Toric PIE Implants
- Incisional surgery derived from RK less reliable



Tears

- Produced in lacrimal gland
- Float across the eye by action of lid blink
- Enter the punctum
- Flow into the nasolacrimal duct and finally the nose



Managing Dry Eyes

Type	Temporary	Intermediate	Permanent
Material	Collagen	Synthetic Polymer	Silicone or Acrylic
Duration	2-4 weeks	3 -6 months	Lasts for years
Usage	Diagnostic	Lasik/ Therapeutic	Therapeutic
Dissolution	Dissolves in few weeks	Slowly dissolves over months	Inert

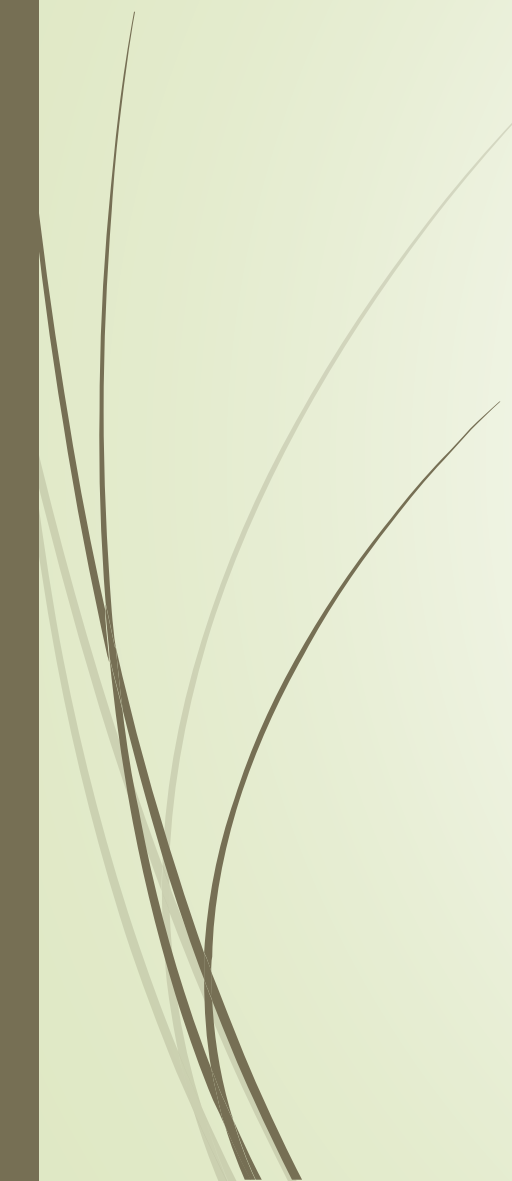


Treatment of Dry Eye

Increase Production	Addition	Prevent Evaporation	Decreased Drainage
Oral vitamins	Artificial tears	Sunglasses	Temporary Punctal occluders
Warm compresses	Lubricating eye ointment	Wide brim hats	Permananet Punctal occluders
Lid scrubs	Humidifiers	Sleeping eye covers	Cautery closure of punctum
Drink flax seed oil	Drink water		Surgical closure of punctum
Restasis or Xiidra	Moisture glasses		
Doxycycline	Scleral contact lens		
Autologous serum			

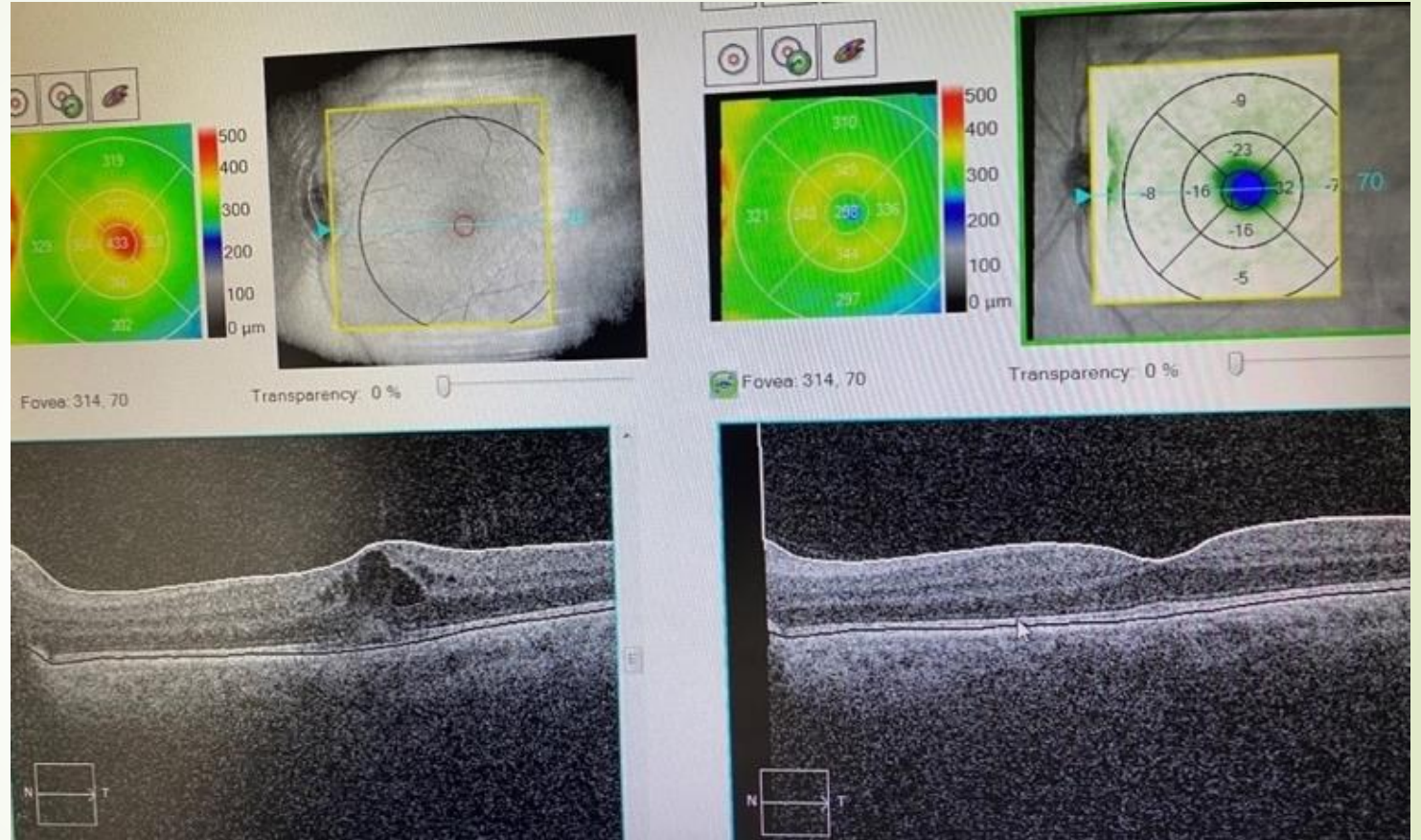


Risks and Complications

- ▶ Commonly : residual refractive power
 - ▶ Inflammation
 - ▶ CME
 - ▶ Infection is extremely rare under ASC settings
- 

CME or cystoid macular edema

- Rare
- Clinical suspicion
- Treatment with steroids



Glare and Haloes

- Design of lens
- Crystalens least
- Avoid diamond lanes
- Yellow tint glasses

