

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

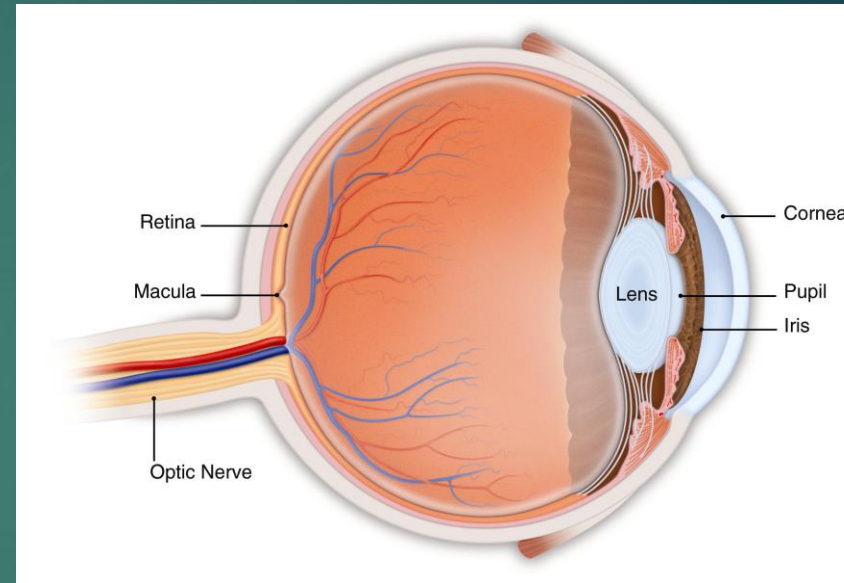
The image displays the Basmala in a highly stylized, cursive Arabic calligraphic script. The text is written in black ink on a white background. The words are 'Bismillah' (In the name of Allah, the Most Gracious, the Most Merciful). The calligraphy is characterized by thick, bold strokes and intricate flourishes. Numerous small numbers (1, 2, 3, 4, 5, 6) and arrows are placed around the letters to indicate the correct sequence and direction of the pen strokes. A long, horizontal connecting stroke links the two main parts of the text. The overall style is elegant and traditional, typical of Islamic calligraphy.

CATARACT

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The Healthy Eye

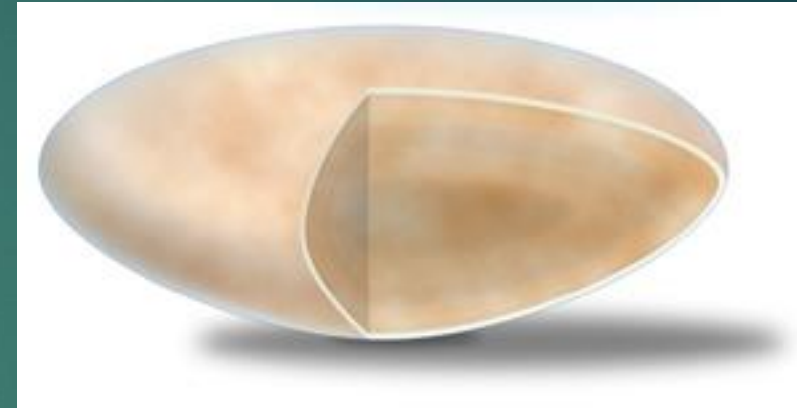
- ▶ Light rays enter the eye through the cornea, pupil and lens.
- ▶ These light rays are focused directly onto the *retina*, the light-sensitive tissue lining the back of the eye.
- ▶ The retina converts light rays into impulses; sent through the optic nerve to your brain, where they are recognized as images.



What is a cataract?



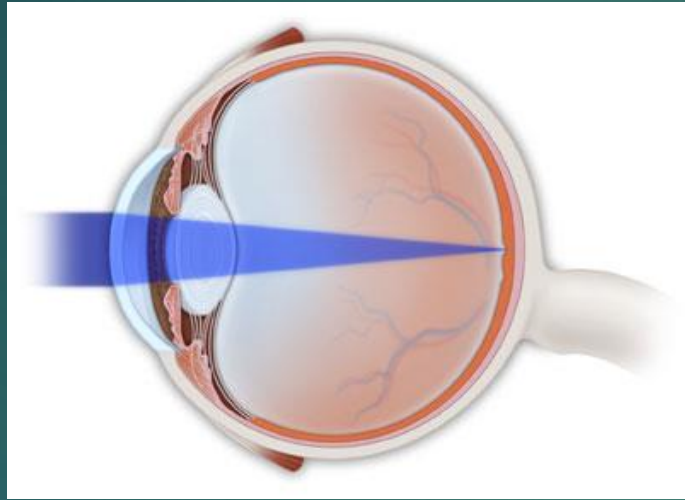
Healthy lens



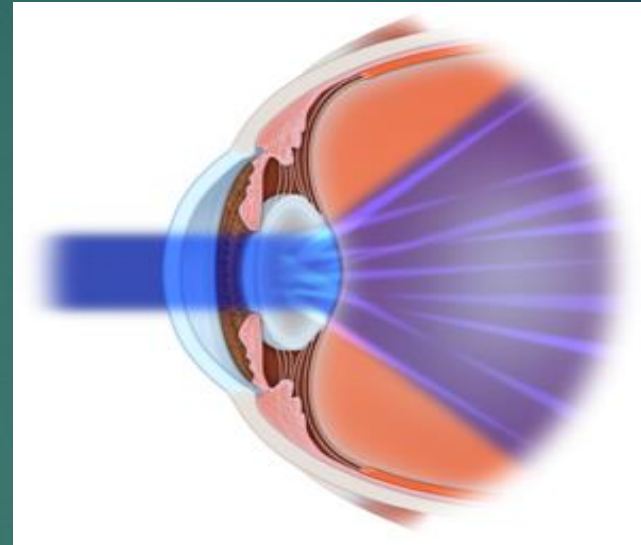
Lens with a cataract

- ▶ Clouding of the normally clear lens of the eye.
- **Can be compared to a window that is frosted or yellowed.**

What is a cataract?



- ▶ A clear lens refracts light onto the retina and fine-tunes our focusing ability.



- **A cloudy lens prevents light from focusing sharply on the retina.**

Symptoms of cataracts


- ▶ Blurring of vision.
- ▶ Glare or light sensitivity
- ▶ Poor night vision and/or difficulty driving at night
- ▶ Double vision in one eye
- ▶ Needing brighter light to read
- ▶ Fading or yellowing of colors



Yellowing of colors

Signs and Symptoms

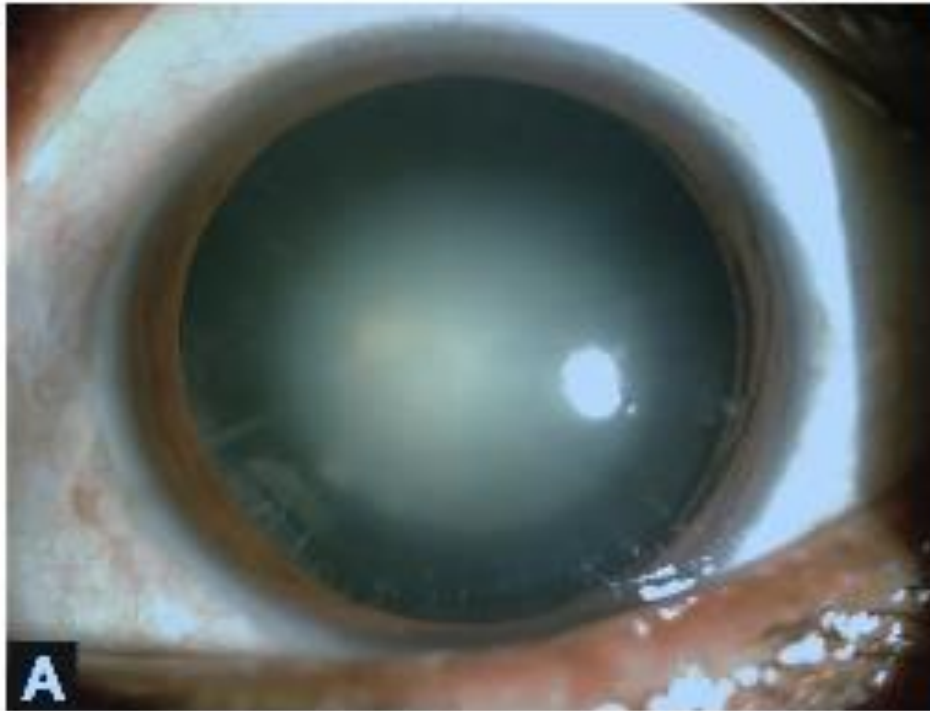
- ▶ Decreased Visual Acuity
- ▶ Glare and Altered Contrast Sensitivity
- ▶ Myopic Shift (second sight)
- ▶ Decreased Visual Function

- 
- ▶ Age-Related Lens Changes
 - ▶ Drug-Induced Lens Changes
 - ▶ Trauma
 - ▶ Radiation
 - ▶ Metabolic Cataract

SOFT CATARACT (FIGS 1A AND B)

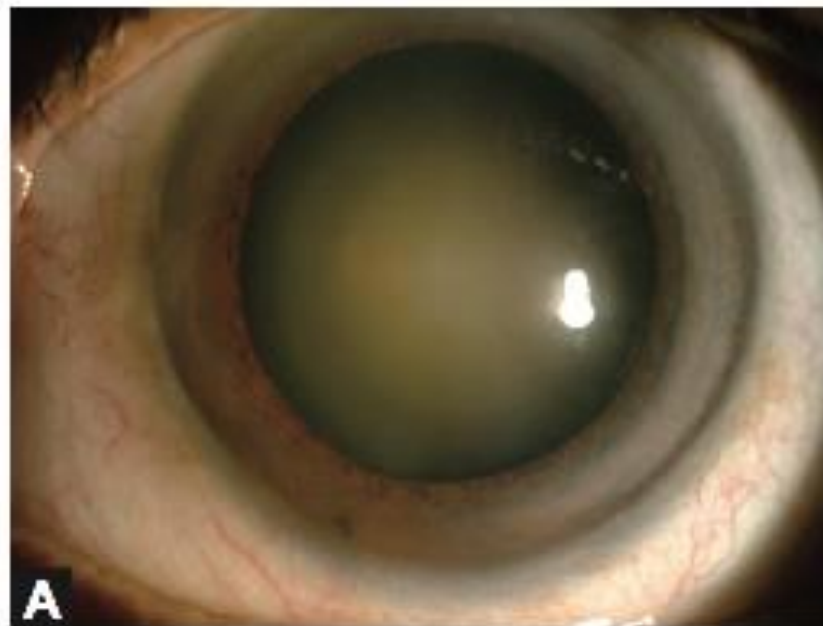
Slit Lamp Examination





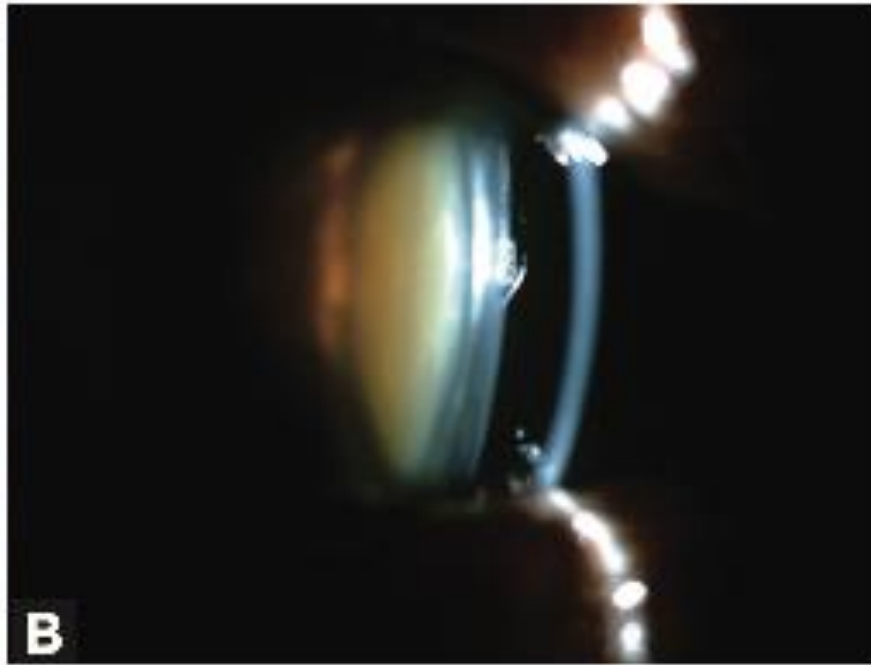
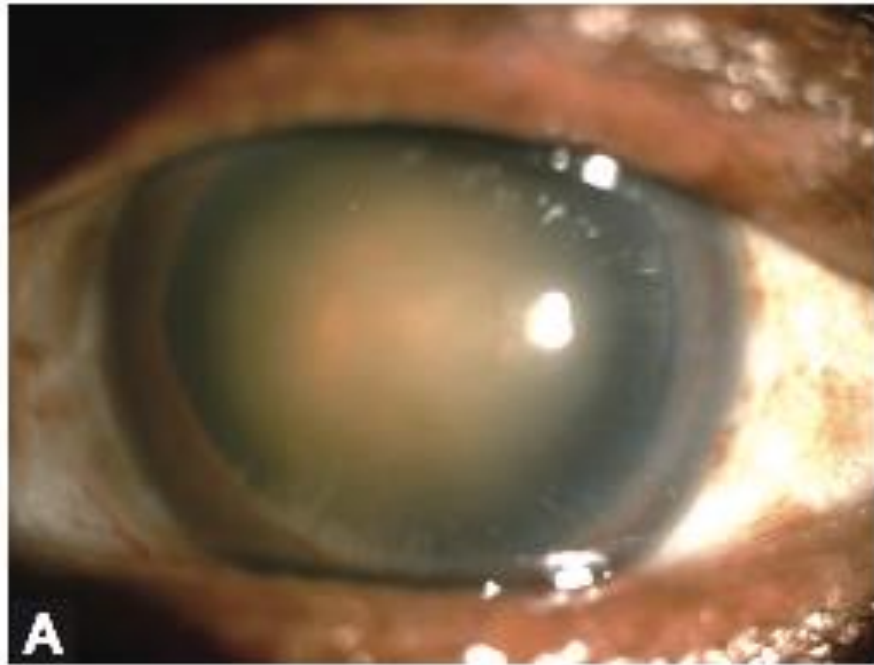
Figs 2A and B (A) Gross view, (B) Slit view

CENTRAL DENSE CATARACT (FIGS 3A AND B)



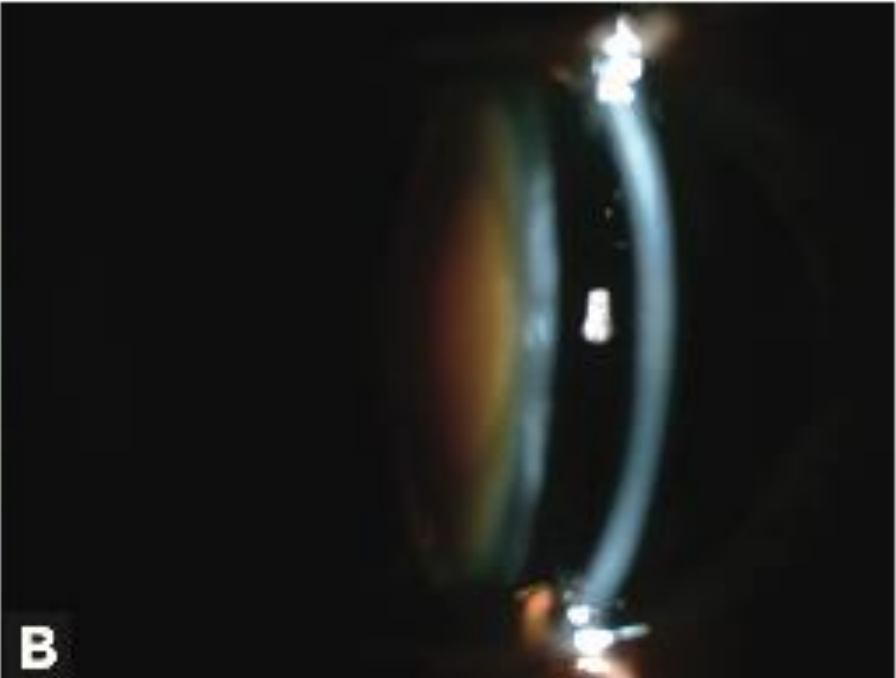
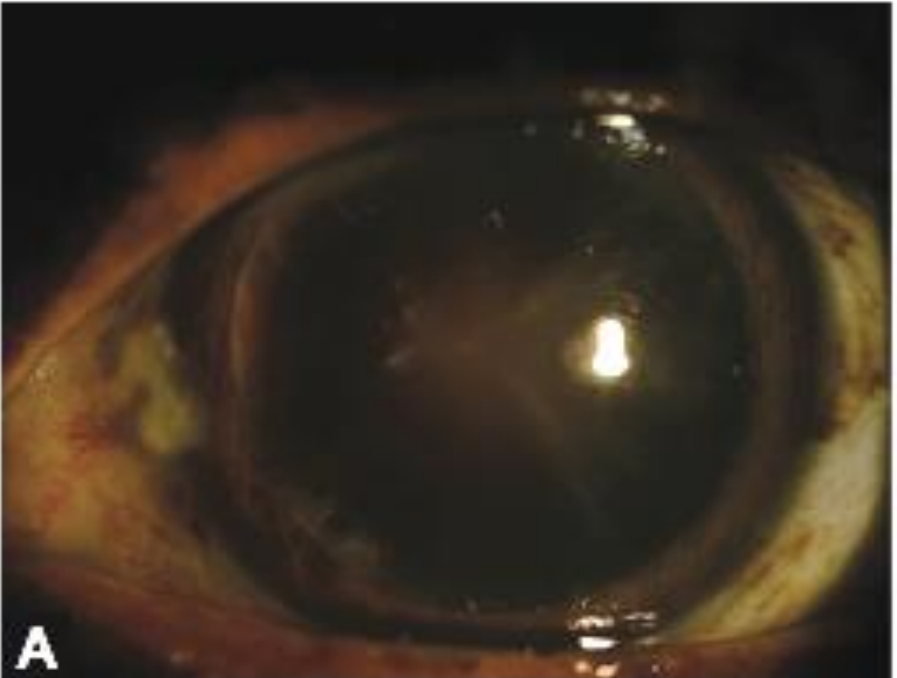


HARD CATARACT WITH DILATED PUPIL (FIGS 2A AND B)

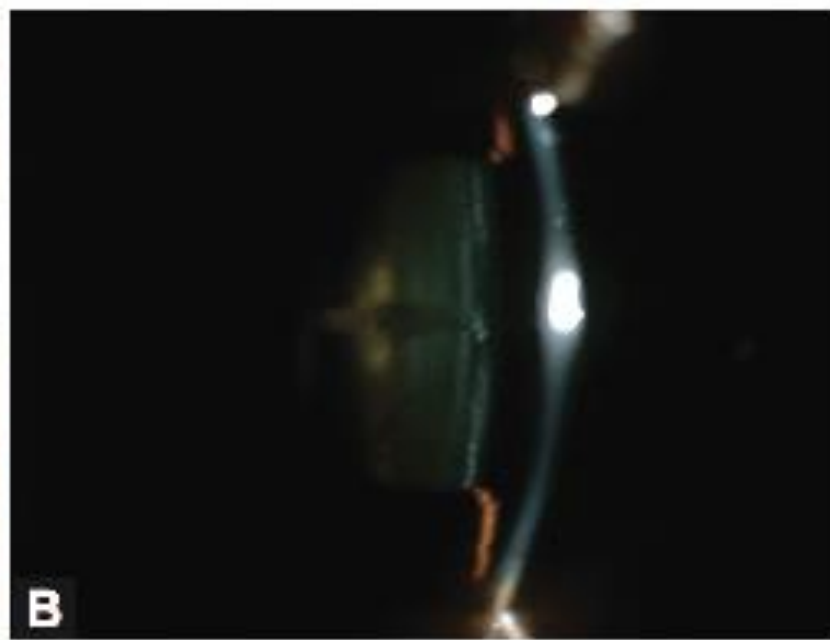
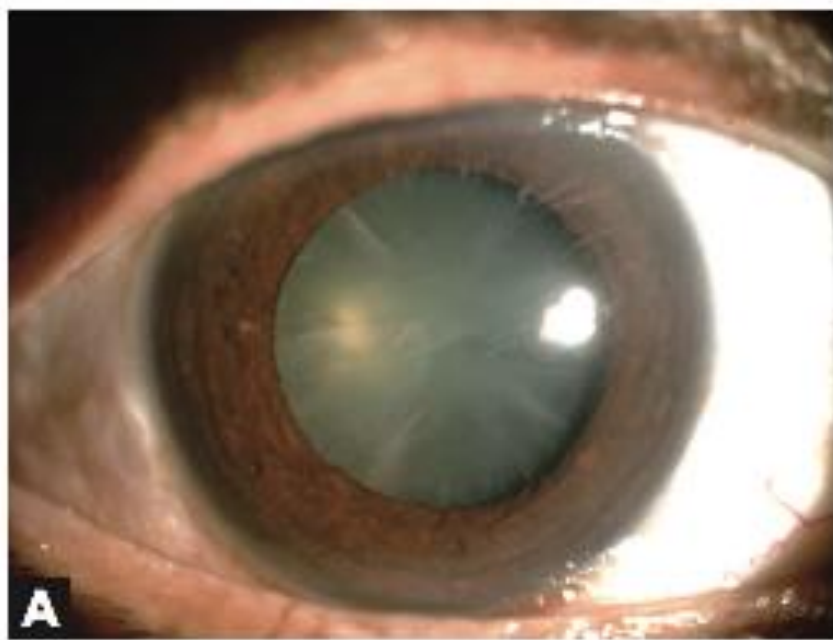




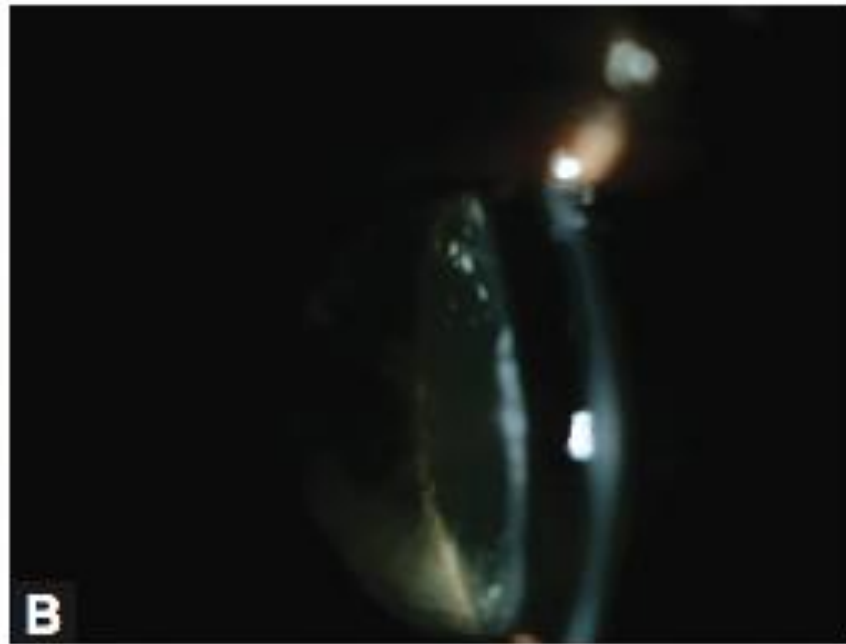
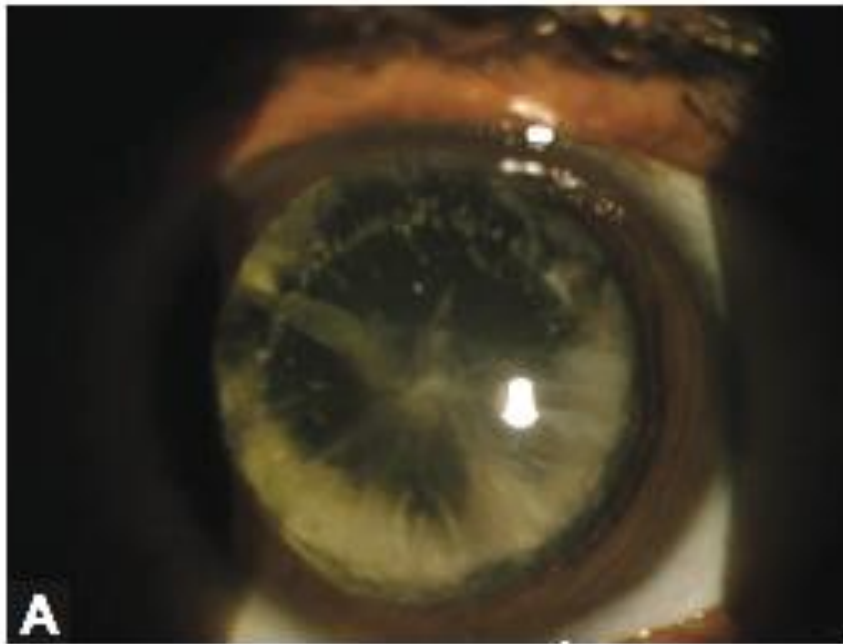
VERY HARD CATARACT WITH BROWN AND BLACK COLOR (FIGS 9A AND B)



SOFT WITH DIFFUSE AND CORTICAL CATARACT (FIGS 4A AND B)



**SOFT CORTICAL CATARACT WITH NO NUCLEUS
(FIGS 7A AND B)**

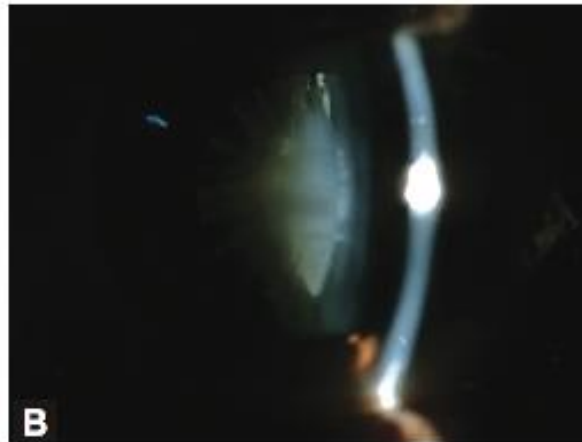
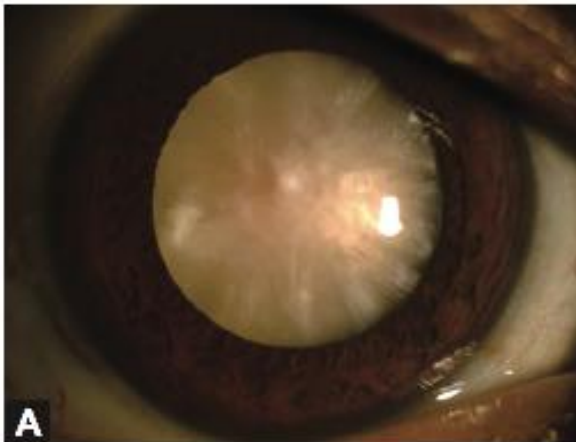


MATURE CATARACT (FIGS 1A AND B)

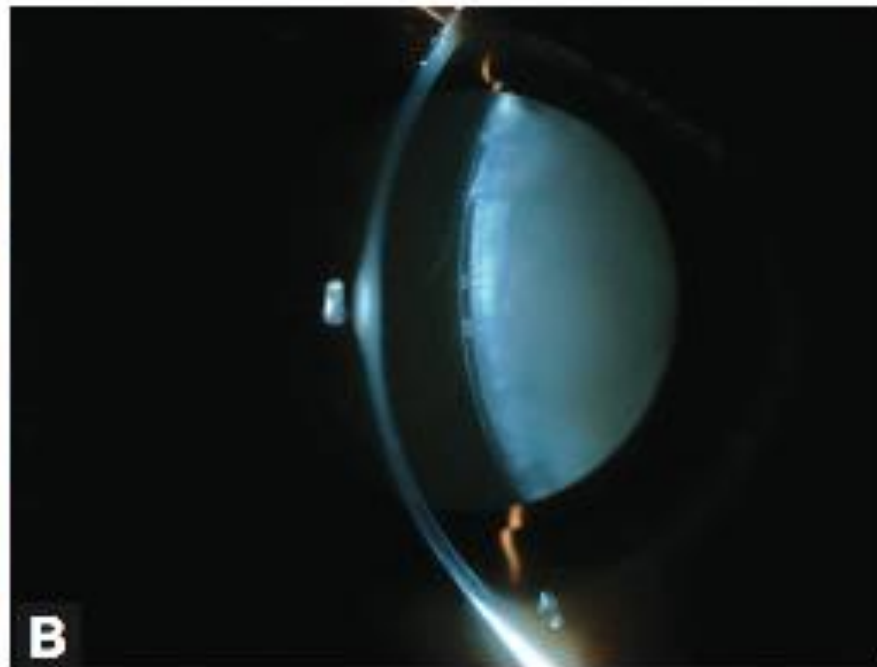
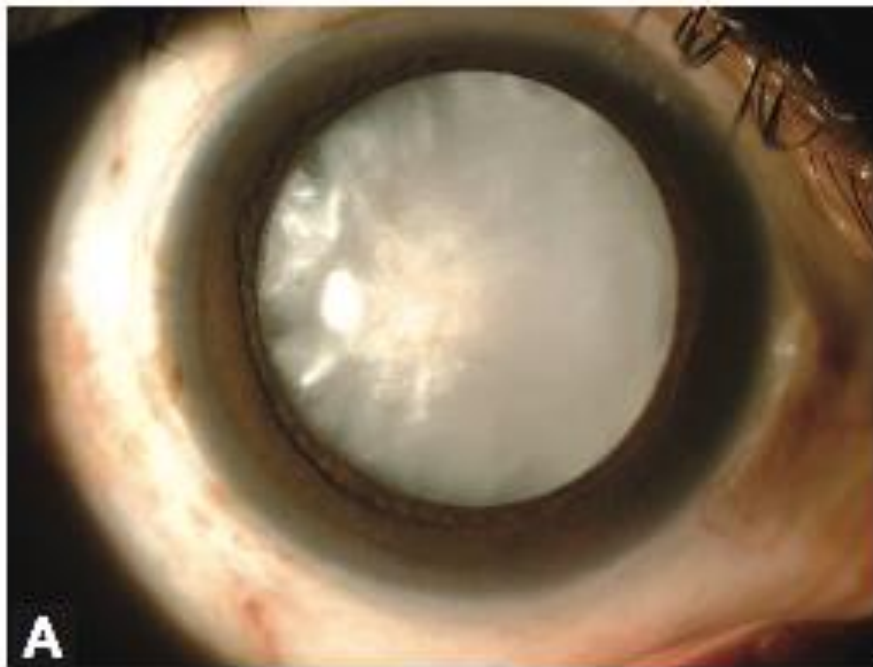
Slit Lamp Examination

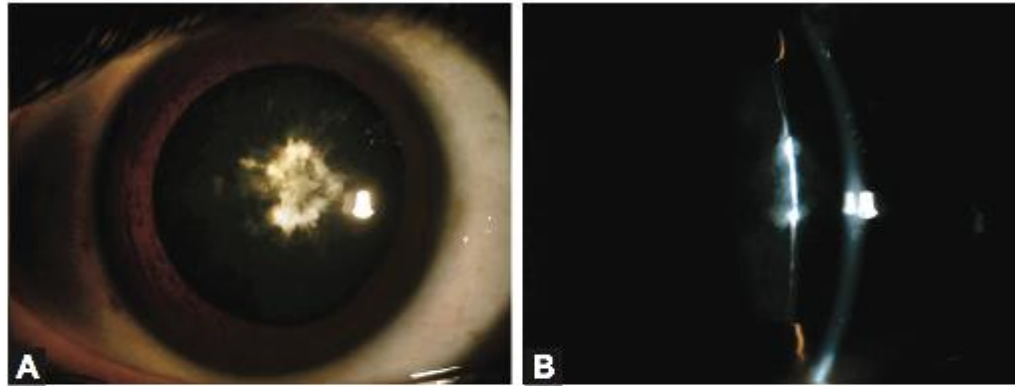
Gross View

1. Pupil is small.
2. Convex anterior capsule, so capsulorhexis is difficult.
3. Anterior chamber may be shallow.
4. Nucleus may be hard. Nucleus seems to be brown in color.

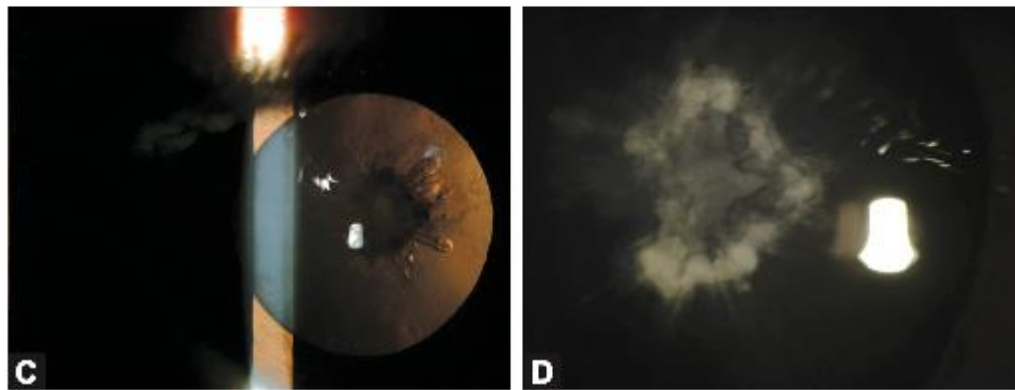


MATURE CATARACT WITH LIQUEFIED CORTEX (FIGS 3A AND B)

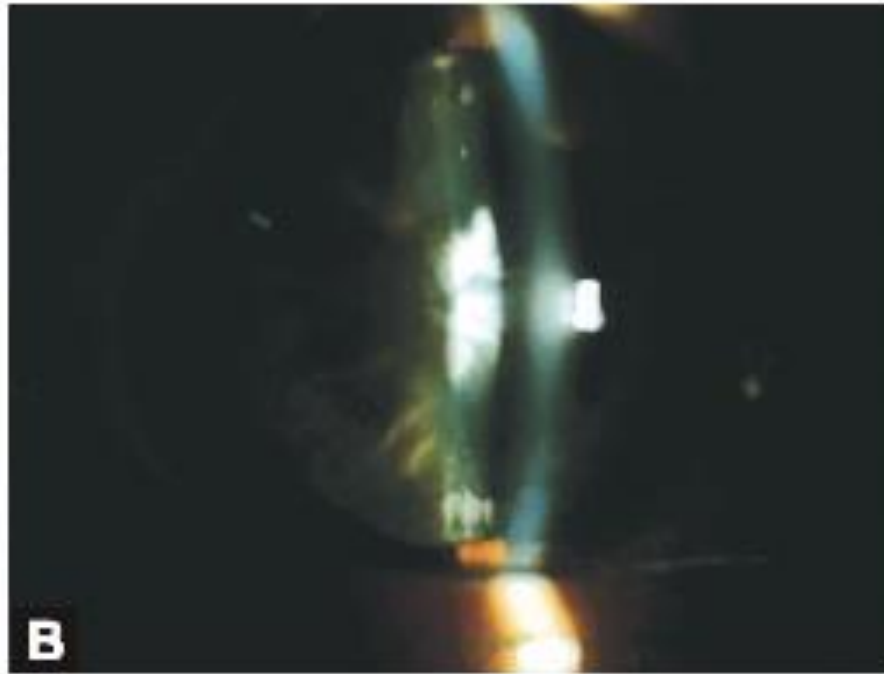
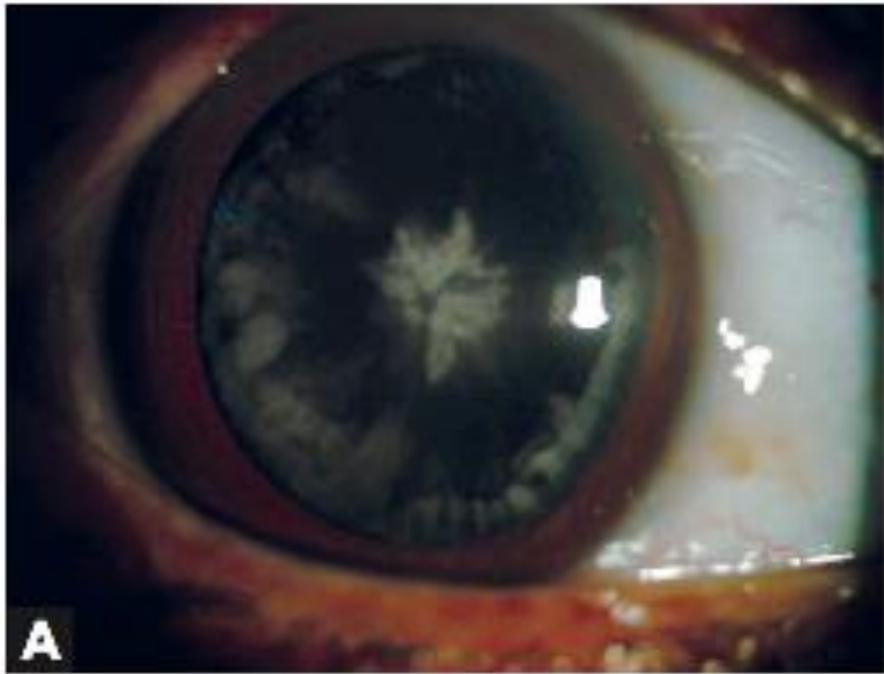


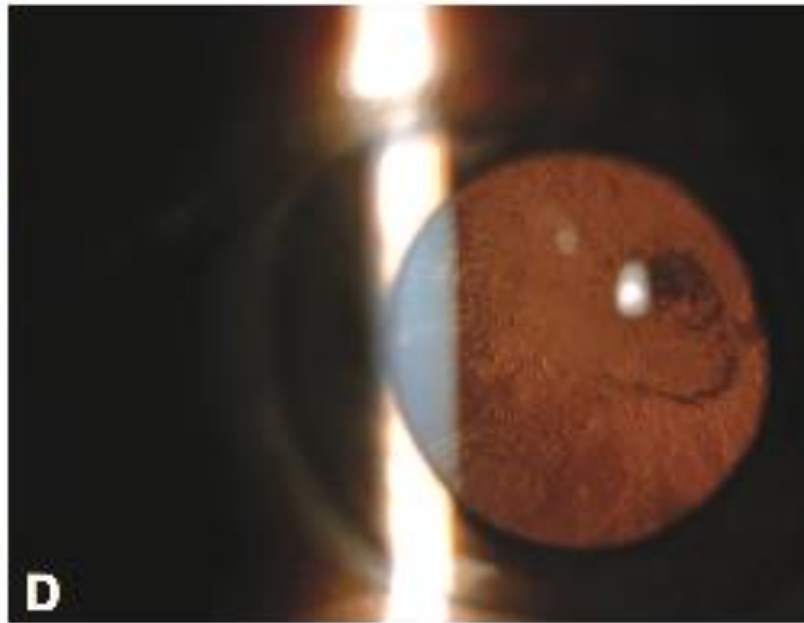
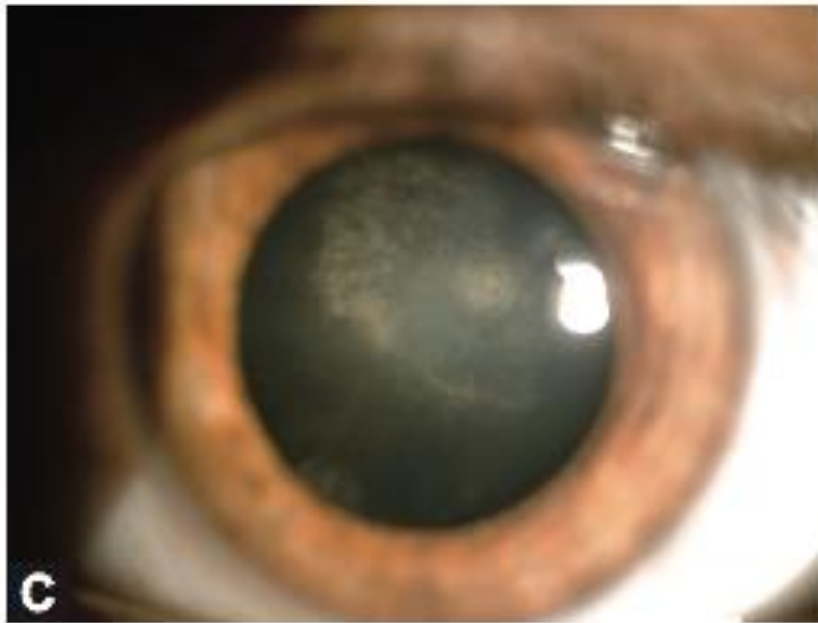
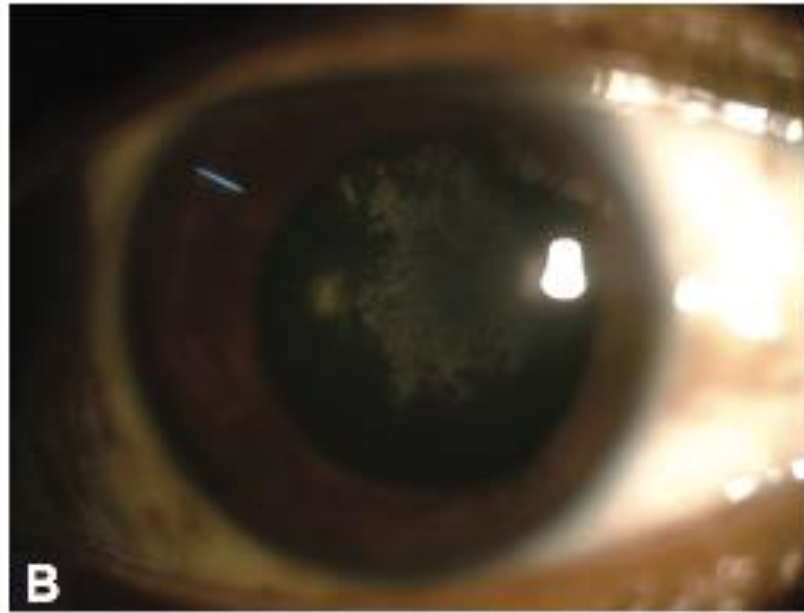
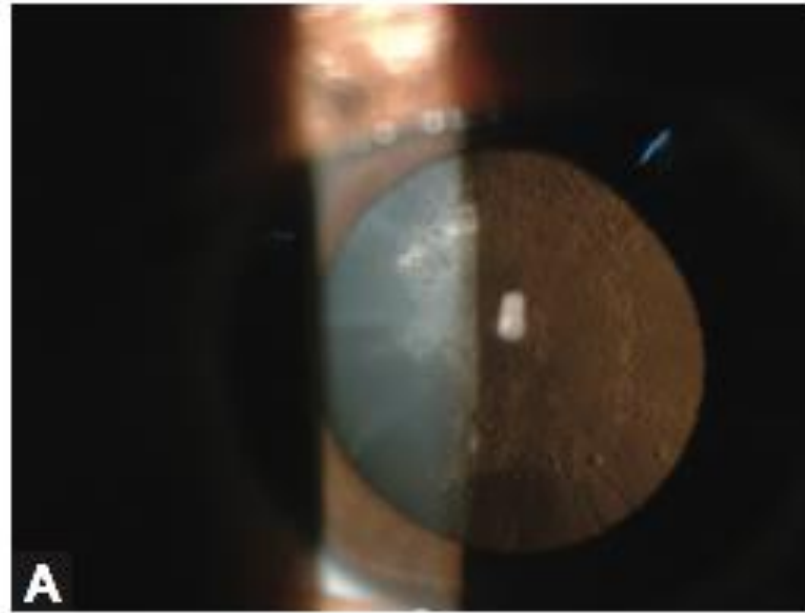


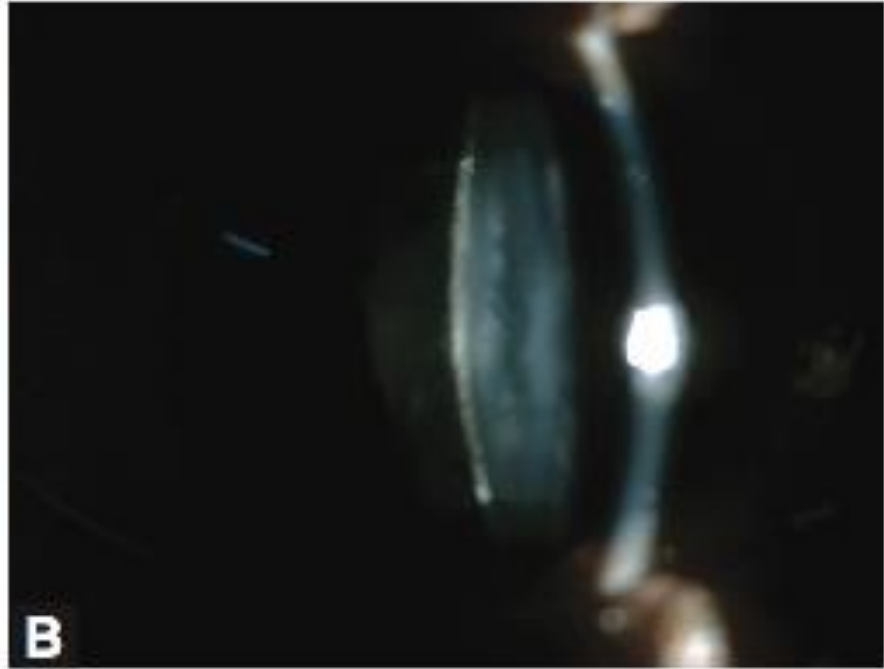
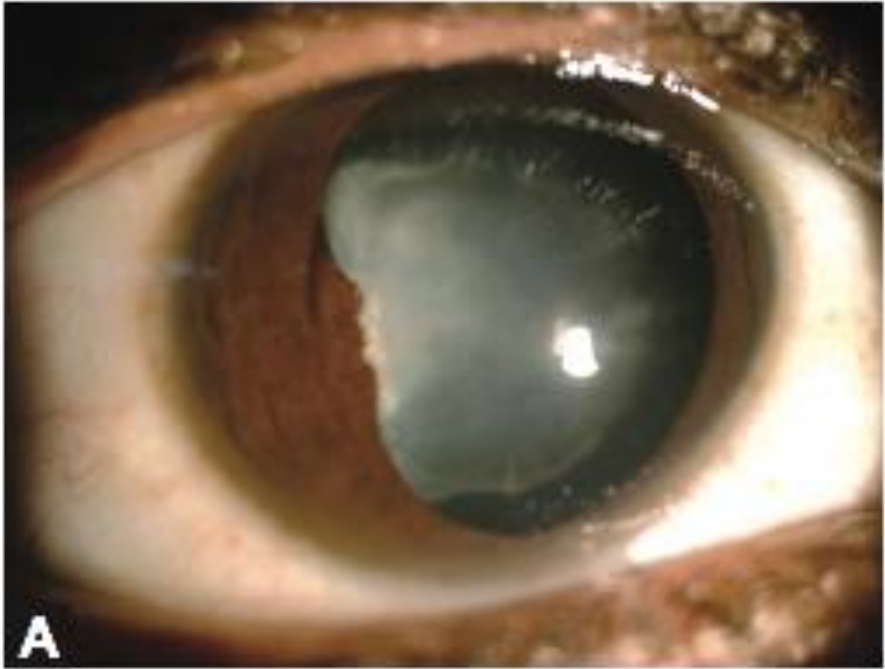
Figs 1A and B (A) Gross view, (B) Slit view



Figs 1C and D (C) Retroillumination, (D) Magnified gross view







TRAUMATIC CATARACT WITH ANTERIOR CAPSULE RUPTURE (FIG. 5)

Slit Lamp Examination

Gross View

1. Traumatic cataract with anterior capsule rupture. Lens material has popped out of the bag and some soft tissue material has seen dispersed

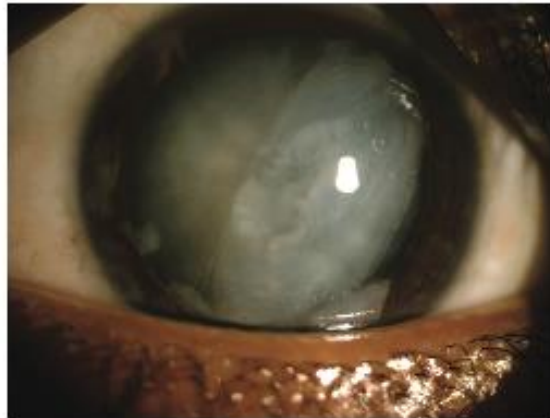
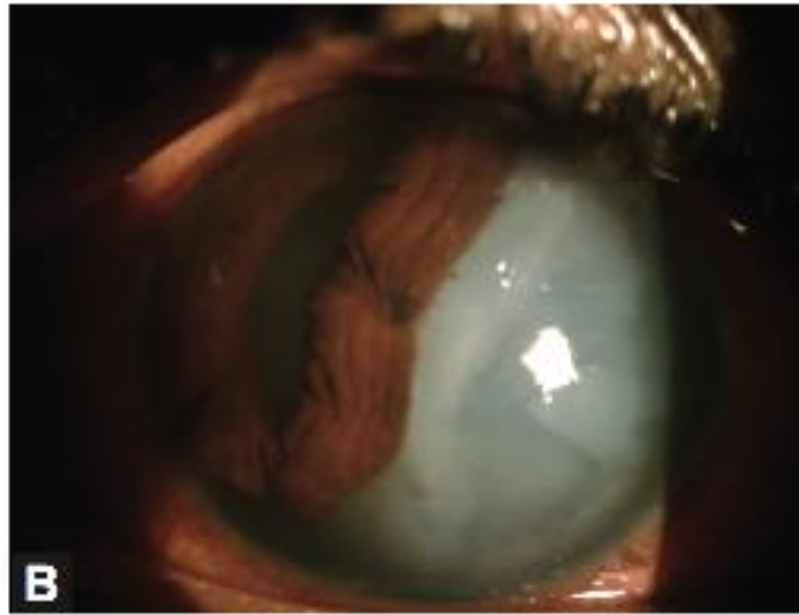
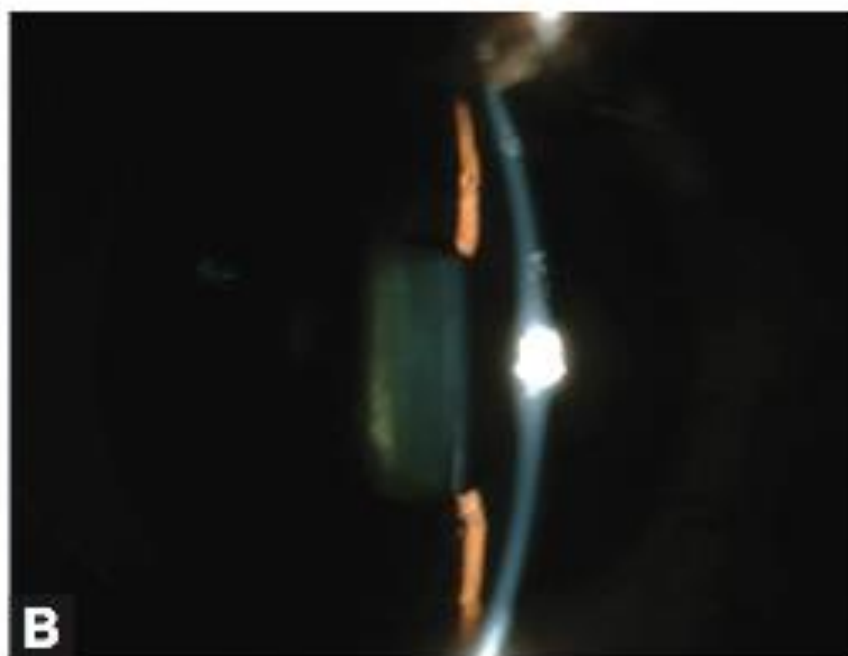
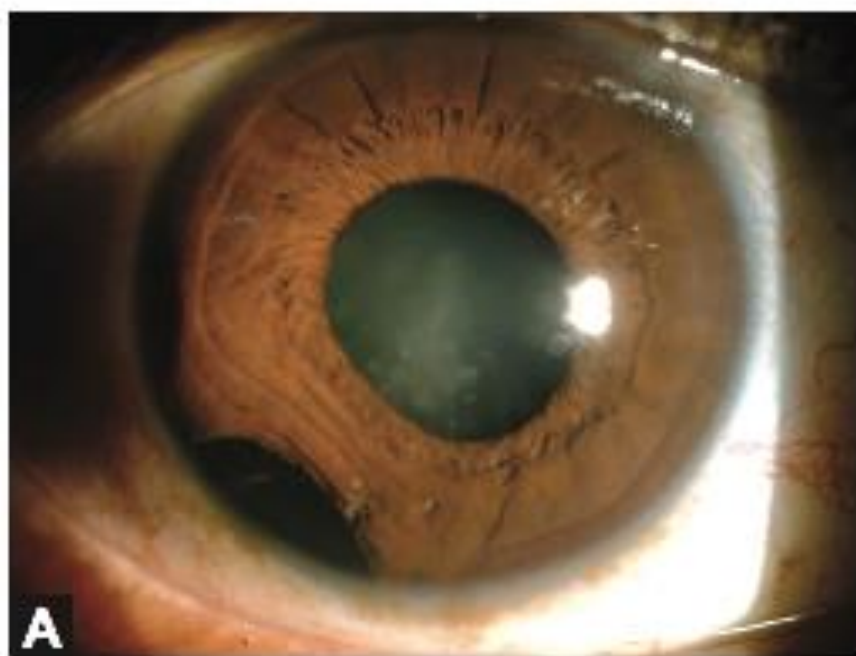


Fig. 5 Gross view rupture of anterior capsule with lens material in anterior chamber

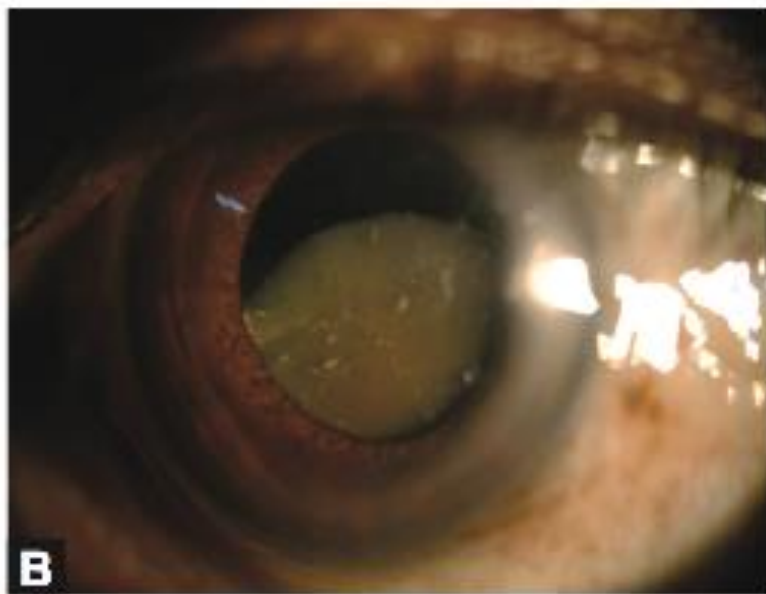
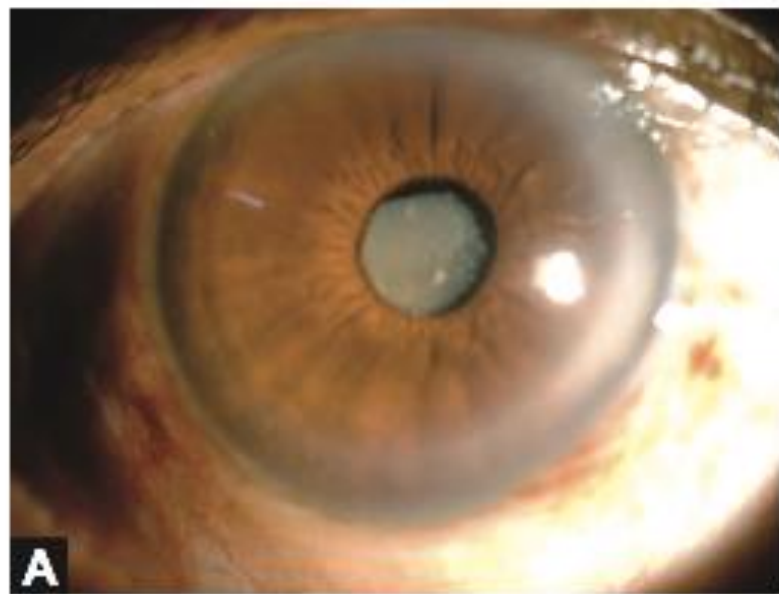
1. This case is difficult to treat.
2. In these cases, iridodialysis and traumatic cataract should be managed.

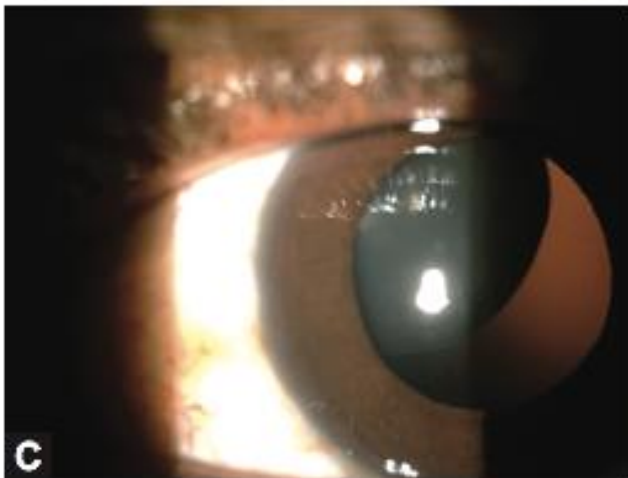
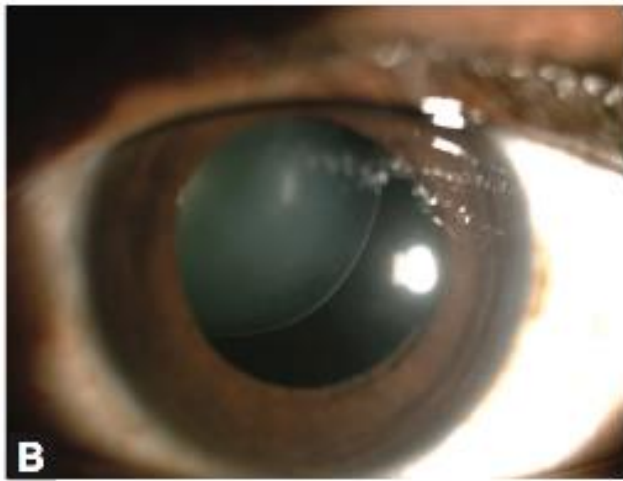
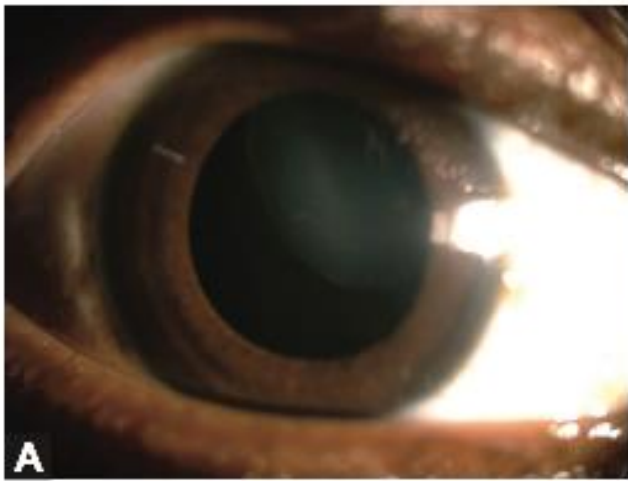


TRAUMATIC CATARACT WITH LOCALIZED IRIDODIALYSIS
(FIGS 11A AND B)

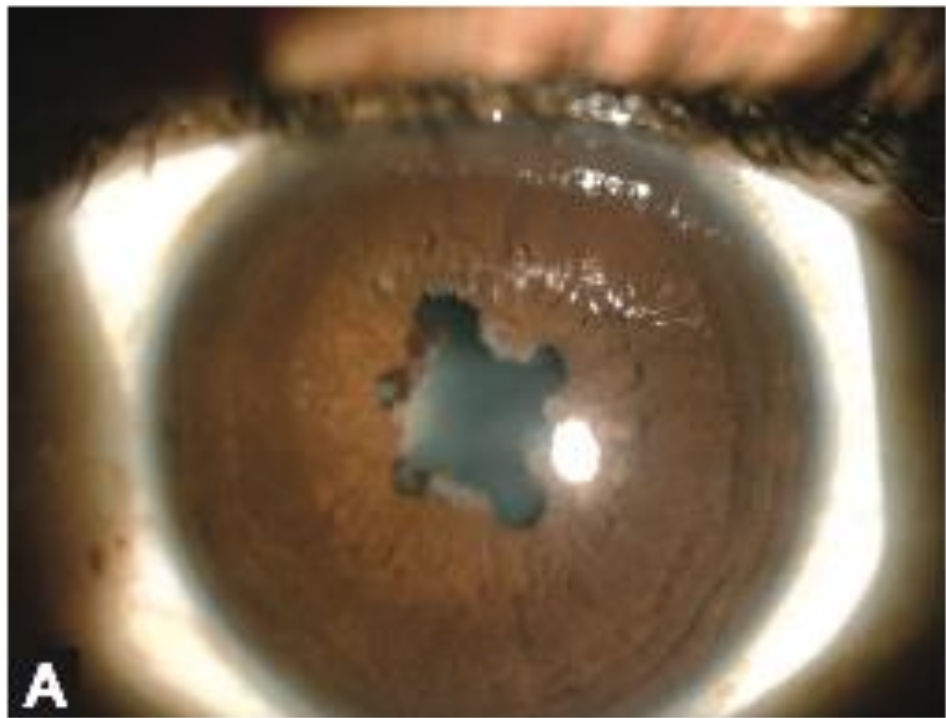


HYPERMATURE CATARACT WITH INFERIOR SUBLUXATION (FIGS 1A AND B)



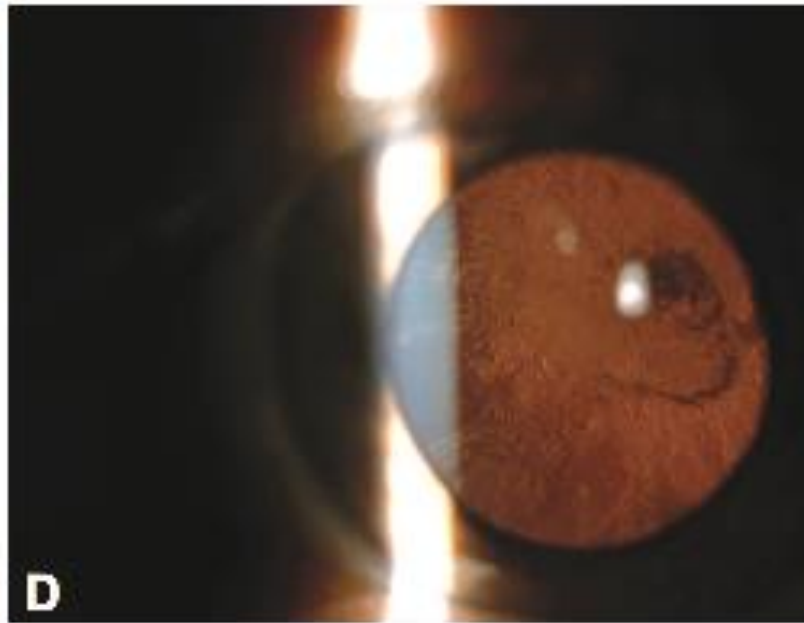
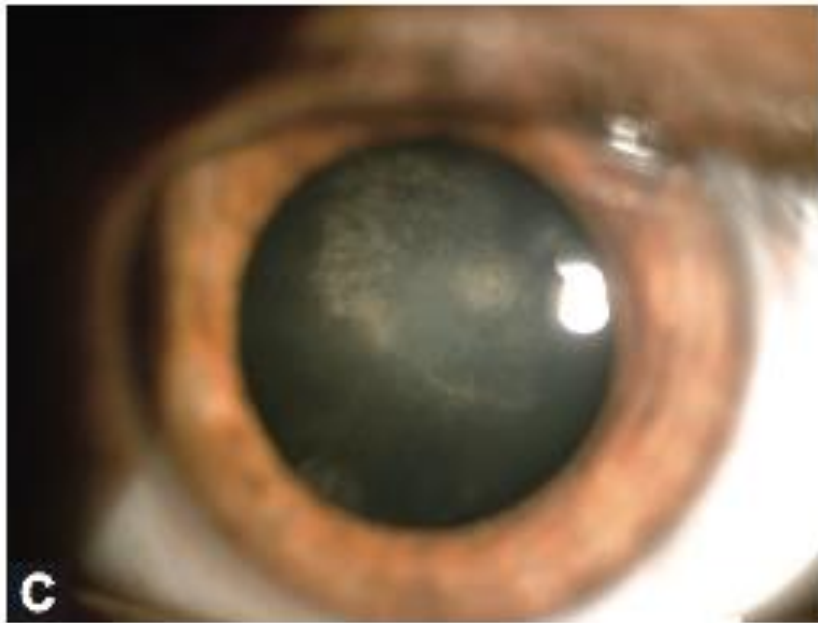
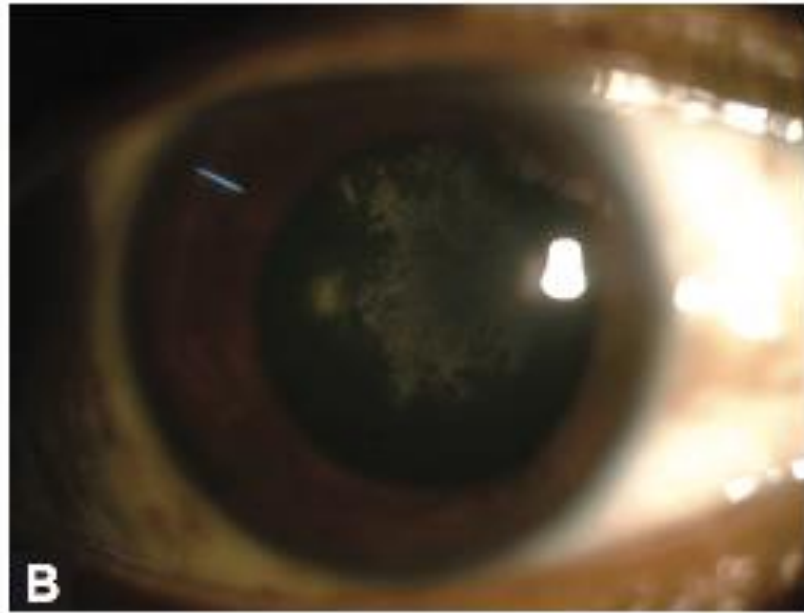
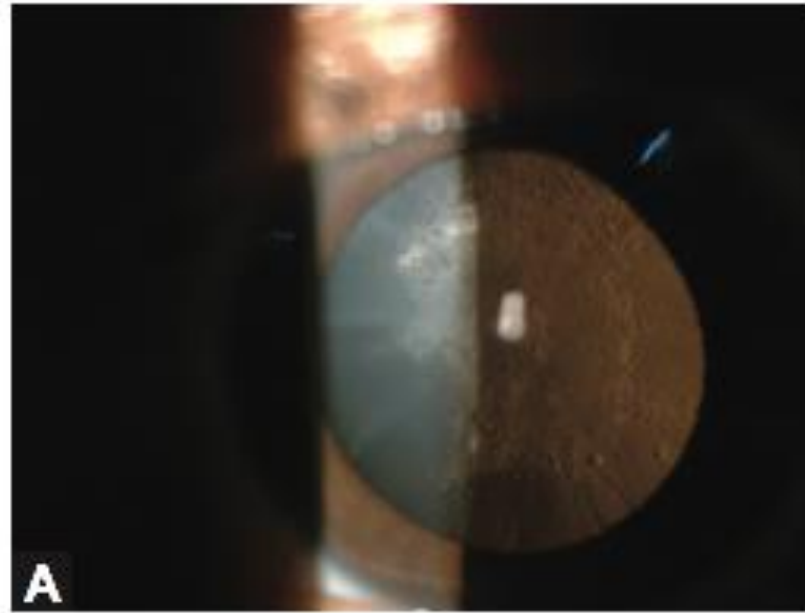


Figs 11A to C (A and B) Gross view,
(C) Retroillumination



Drug-Induced Lens Changes

- ▶ Corticosteroids
- ▶ Phenothiazines
- ▶ Miotics
- ▶ Amiodarone
- ▶ Statins
- ▶ Tamoxifen



Metabolic Cataract



- ▶ Hypocalcemia
- ▶ Wilson Disease
- ▶ Myotonic Dystrophy

Galactosemia



Figure 5-17 "Oil droplet" bilateral cataracts in a patient

Diabetes Mellitus

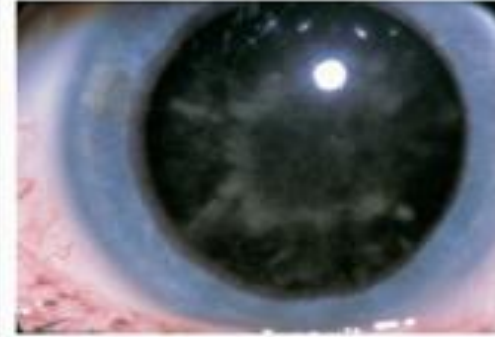



Figure 5-16 Diabetic cataract, or "snowflake" cataract, consists of gray-white subcapsular opacities. (Courtesy of Karla J. Johns, MD.)

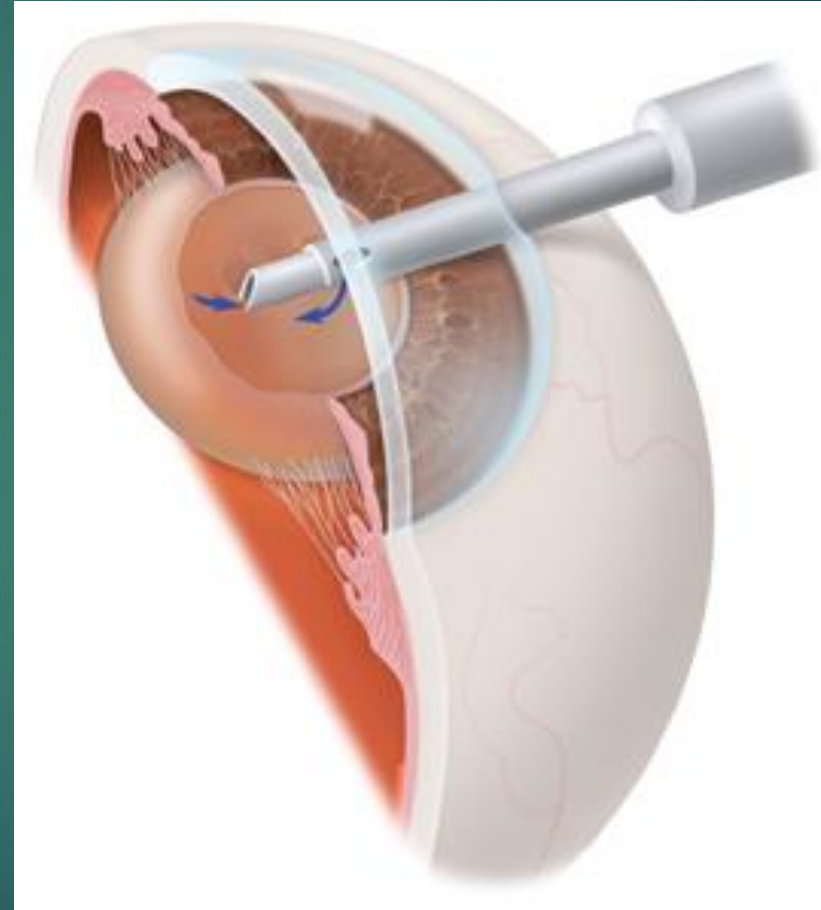
- 
- ▶ “**Smoking**, the use of smokeless tobacco products, and excessive **alcohol consumption** are significant, avoidable risk factors for cataract
 - ▶ In numerous studies performed worldwide, these practices have consistently been associated with an increase in the frequency of **nuclear opacities**
 - ▶ Although patients may know the general health risks of smoking and excessive alcohol consumption, they may not know about the risks of ocular conditions such as **macular degeneration** and **cataract** that are related to these practices
 - ▶ Ophthalmologists can inform their patients about these risks, and they are in a strong position to encourage individuals to **stop smoking** and **reduce alcohol consumption**

When should cataract surgery be performed ?

- ▶ When cataracts cause enough vision loss to interfere with your daily activities:
 - ▶ Performing your job
 - ▶ Driving safely
 - ▶ Reading and watching TV in comfort
 - ▶ Taking medication
- ▶ You and your ophthalmologist should decide together when surgery is appropriate

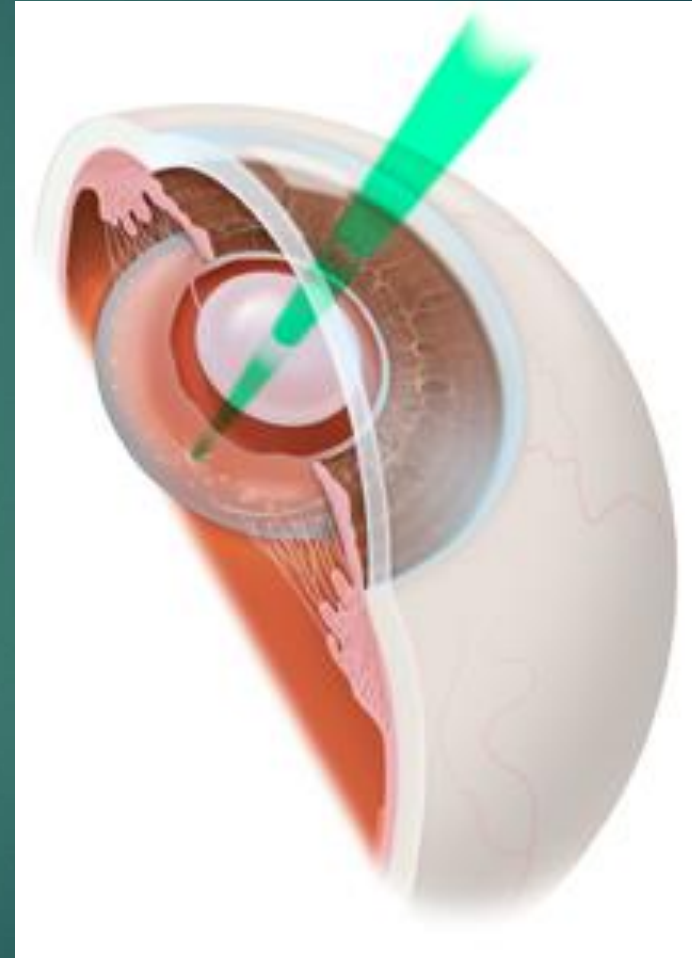
How is cataract surgery performed?

- ▶ A small incision is made close to the edge of the cornea
- ▶ A tiny, high-frequency ultrasound instrument is inserted that breaks up center of the lens
- ▶ Broken-up cloudy lens material is removed through the incision



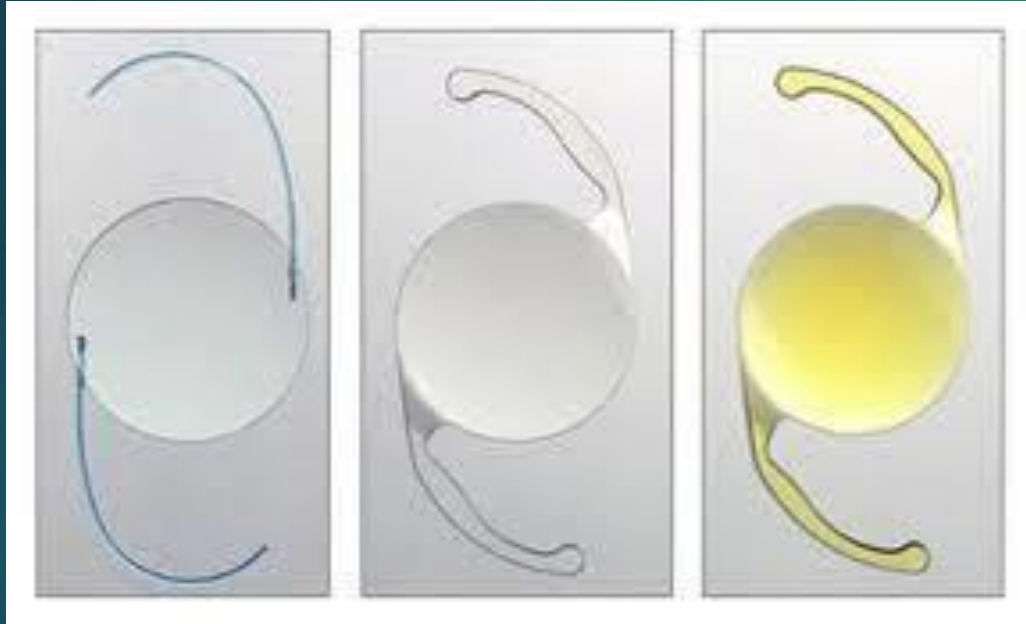
Posterior capsulotomy

- ▶ In a small number of cases, the natural capsule supporting IOL can become cloudy after cataract surgery
- ▶ Posterior Capsulotomy: laser surgery to open cloudy capsule and restore clear vision



Posterior Capsulotomy

New intraocular lenses



Complications of Cataract Surgery

- ▶ Capsular Rupture
- ▶ Corneal Edema
- ▶ Descemet Membrane Detachment

- ▶ Induced Astigmatism
- ▶ Postoperative Uveitis
- ▶ Posterior Capsule Opacification

- ▶ Endophthalmitis
- ▶ Cystoid Macular Edema
- ▶ Retinal Detachment

Is it laser?

- ▶ NO! It's ultrasound, but.....
- ▶ Laser cataract surgery (femto) is being used in some centres
- ▶ Even with laser at the moment, phaco is required

Femtosecond Laser Cataract Extraction

- ▶ In 2010, the US FDA approved femtosecond lasers for cataract extraction
- ▶ These Nd:glass lasers generate focused, ultrashort pulses (10–15 fs) at a wavelength of 1053 nm (in near-IR region)

Conclusion

- ▶ Surgery is the only treatment for cataract
- ▶ Modern day case micro-incision cataract surgery under topical anaesthesia- gold standard
- ▶ Post-operative drops for 4-6 weeks
- ▶ Range of innovative IOLs available
- ▶ Femtosecond cataract surgery being improved



▶ THANK YOU