

# **Removal of Retained Lens Fragments**

## **What are retained lens fragments?**

During cataract surgery, the natural lens is broken up and removed. In a small proportion of cases (about 1 in every 200 to 1 in every 1,000), pieces of the lens may fall through the supporting membrane into the back of the eye, into the vitreous jelly. This is called "retained lens fragments" or sometimes a "dropped nucleus".

This is not a mistake by the surgeon – it happens because some cataracts are particularly dense or difficult, and the supporting structures can sometimes be weaker than expected. When this occurs, the cataract surgeon will typically stabilise the eye and refer you to a vitreoretinal surgeon for removal of the lens material.

## **Why do the fragments need to be removed?**

Lens material left in the vitreous can cause significant problems:

- Raised pressure in the eye (glaucoma)

- Inflammation inside the eye (uveitis)
- Swelling at the back of the eye affecting vision (cystoid macular oedema)
- Swelling of the cornea
- Retinal detachment

If only a tiny amount of soft lens material has dropped, it may be possible to manage with drops while the material dissolves. However, if there is significant material, particularly hard nuclear material, surgical removal is usually necessary.

## **When should the surgery be performed?**

Evidence suggests visual outcomes are similar whether surgery is performed within the first week or after a longer delay. Typically, surgery is arranged within one to two weeks, allowing the eye to settle from the initial cataract surgery. However, if eye pressure remains very high despite medication, more urgent surgery may be required.

## **What does the surgery involve?**

The operation is a pars plana vitrectomy, performed under local anaesthetic as a day case. The vitreous jelly is removed along with the retained lens material. For particularly dense lens material, I use heavy liquid (perfluorocarbon) to float the fragments forward where they can be removed using an ultrasound probe.

At the end, the eye may be left filled with fluid, or a gas bubble may be used if there are any retinal concerns.

Please see the general information on vitrectomy surgery for more details.

## **What about a lens implant?**

Whether you have a lens implant depends on how much support remains after the original cataract surgery:

**If the capsular bag or rim is intact:** A lens can often be placed in the sulcus (just in front of the capsular bag). This is the simplest option.

**If there is no capsular support:** I use an Artisan lens,

which clips onto the back of the iris. This provides stable, long-term support without relying on the capsular bag.

**If it is safer to wait:** Sometimes it is better to complete the vitrectomy first and return for a second procedure to insert a lens implant once the eye has healed. Temporary glasses or a contact lens can correct your vision in the meantime.

## **Risks**

**Retinal detachment:** The risk is higher in eyes with retained lens fragments – about 5 to 10 in every 100 may develop detachment before or after vitrectomy. This usually requires further surgery.

**Raised eye pressure:** Usually controlled with drops or tablets.

**Cystoid macular oedema:** Swelling at the centre of the retina, usually responds to anti-inflammatory drops.

**Corneal problems:** If the cornea was damaged during the original surgery, it may take longer to recover.

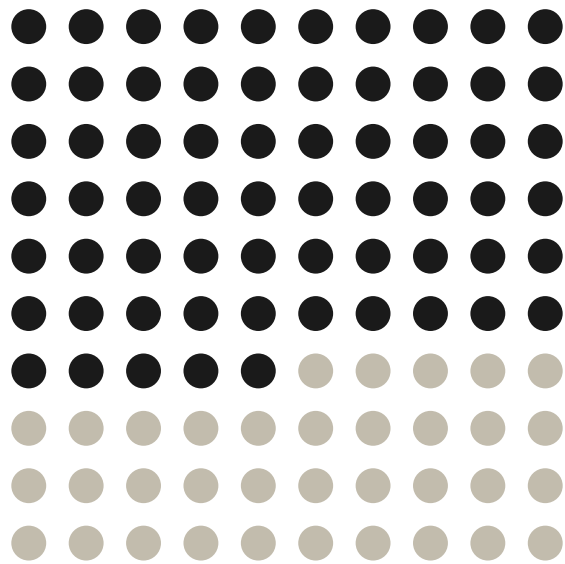
**Infection:** About 1 in every 1,000, but serious.

## **Results**

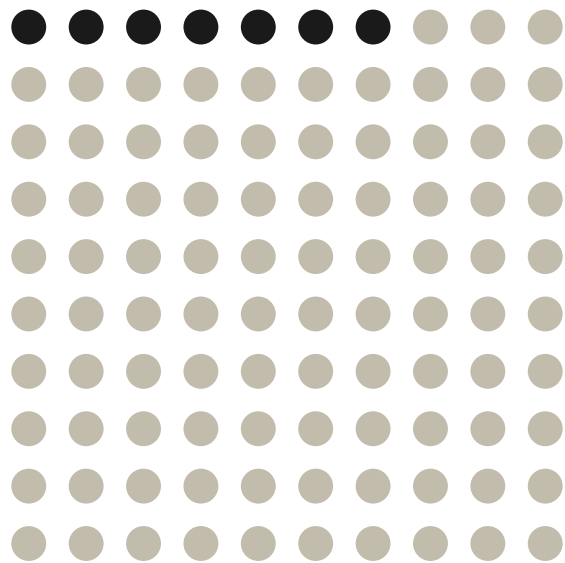
Most patients achieve good vision after surgery. Studies show about 60 to 70 in every 100 achieve vision of 6/12 (driving standard) or better. However, outcomes depend on pre-existing eye conditions, retinal health, and whether complications develop.

## **The main risks at a glance**

Each grid below is 100 people who have the operation; the shaded dots are those affected.



**About 60 to 70 in every 100** – reach driving-standard vision (6/12) or better.



**About 5 to 10 in every 100** – a retinal detachment, needing further surgery.

## **Before surgery**

If you have been referred with retained lens fragments, you will usually have been started on drops to control inflammation and eye pressure. Continue these as directed.

Please see the general information on vitrectomy surgery and what to expect after vitrectomy.

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If you have had eye surgery and are concerned, see emergency contacts.

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**Emergency contacts:** <https://www.vitygas.com/information/emergency-contacts/>

NHS patients call Limpsfield Ward or the East Surrey Hospital switchboard. Private patients use the mobile number provided.