PROCEDURE

Retinal detachment repair

Retinal detachment repair is surgery to return a detached retina to position and seal retinal tears.

PURPOSE
Reattach the retina and seal retinal tears

PROCEDURE TYPE
Therapeutic surgery using a buckle, gas bubble, or vitrectomy

WHERE IT IS DONE
Outpatient clinic or operating theatre

ANAESTHESIA
Local with sedation or general anaesthesia

HOW LONG IT TAKES
About 30 minutes to two hours

PREPARATION
Fasting when instructed, medication review, and a ride home

RECOVERY
Home same day; no driving until cleared

MAIN RISKS
Redetachment, cataract, bleeding, infection, or raised eye pressure

RESULTS
Retinal position known promptly; vision settles over weeks to months

Overview

Retinal detachment repair returns the retina to the back wall of the eye. The retina is the light-sensitive layer that sends visual information to the brain.

Most repairs also seal the tear or hole that allowed fluid to collect under the retina. Treatment is usually time-sensitive because detached retinal tissue cannot work normally.

There are three main repair methods:

Some repairs combine these methods. Your surgeon recommends an approach based on the tear's position, the amount of retina involved, previous eye surgery, and the condition of the vitreous.

- Pneumatic retinopexy: A gas bubble is injected into the eye to press the retina back into place. Laser treatment or freezing treatment seals the tear.
- Scleral buckle: A soft silicone band is placed around the outside of the eye. It gently pushes the eye wall toward the detached retina.
- Vitrectomy: The surgeon removes the clear gel inside the eye, called the vitreous. The eye is then filled with gas, air, or silicone oil to support the retina.

Why the procedure is performed

The procedure is performed to stop fluid from passing through a retinal tear, return the retina to position, and prevent further loss of sight.

Repair may be recommended for a retinal detachment caused by a tear. This is called a rhegmatogenous retinal detachment . Surgery may also be used when scar tissue pulls the retina away from the eye wall, known as a tractional detachment .

The main goals are to preserve the sight you still have and, where possible, recover some lost sight. Surgery cannot always restore vision that was lost before treatment. The result is influenced by whether the centre of the retina, called the macula, detached and how long it was detached.

Who should and should not have it

Repair is generally offered when part of the retina has detached or when a retinal tear poses an immediate threat to vision. The recommended timing and technique are based on the detachment's location, size, cause, and effect on the macula.

Not every retinal problem requires this operation. A tear found before the retina detaches may be treated with laser or freezing alone. Some detachments caused by inflammation, leaking blood vessels, or another illness are managed by treating the underlying condition.

A particular repair method may not be suitable if:

These issues may change the technique or anaesthetic rather than rule out repair. Because untreated detachment may cause permanent sight loss, delays are considered carefully.

- The tears cannot be supported by a gas bubble
- You cannot maintain the required head position
- Air travel or high-altitude travel cannot be postponed after gas placement

- Scarring, bleeding, or multiple tears make a simpler repair unlikely to work
- An active eye infection or serious medical problem makes immediate surgery unsafe

How to prepare

Follow the treating facility's instructions first, because they take priority over general information.

You may need to stop eating and drinking for several hours if you are having sedation or general anaesthesia. Confirm when to stop and whether you may take usual medicines with a small sip of water.

Give the team a complete list of medicines, supplements, allergies, and medical conditions. Mention blood thinners like warfarin or apixaban , diabetes medicines, and previous reactions to anaesthesia. Do not stop a blood thinner unless the treating team specifically tells you to.

Arrange for an adult to take you home. You may also need help with meals, eye drops, and daily tasks during the first few days.

Ask whether a gas bubble is likely to be used. If so, discuss planned flights, high-altitude travel, and any future operation that might involve nitrous oxide anaesthetic gas. You may also want to arrange pillows or positioning equipment if face-down recovery is expected.

What happens during the procedure

Your eye and the surrounding skin are cleaned. Local anaesthetic may numb the eye, often with medicine to help you relax. General anaesthesia may be used for some operations.

With pneumatic retinopexy, the surgeon places a gas bubble inside the eye. Your head is positioned so the bubble presses against the tear. Laser or freezing treatment creates a scar around the tear, forming a seal.

For a scleral buckle, the surgeon attaches a silicone band to the outside of the eye. The band is usually left permanently. Fluid under the retina may be drained.

During vitrectomy, very small instruments enter through the white part of the eye. The surgeon removes vitreous gel and any tissue pulling on the retina. Laser or freezing seals the tears. Gas, air, or silicone oil then holds the retina in place.

A pad or protective shield may cover the eye afterward. Most people go home the same day, although an overnight stay is sometimes needed.

Recovery and what to expect afterward

Mild aching, scratchiness, watering, or eyelid swelling is common at first. Over-the-counter pain relief may be enough, but use only medicines approved by your surgical team. Severe or increasing pain is not an expected part of routine recovery.

You can usually eat and drink after you are fully awake, unless told otherwise. Start with light food if the anaesthetic makes you feel sick.

Activity is limited while the eye heals. Avoid rubbing the eye, heavy lifting, strenuous exercise, and swimming until cleared. Wear the shield as instructed and use prescribed drops exactly as directed.

If you have a gas bubble, you may need to hold your head in a specific position for several days. Vision may look as though you are viewing through a moving line as the bubble shrinks. Do not fly, travel to high altitude, or receive nitrous oxide anaesthesia until your eye team confirms that the bubble has disappeared.

Do not drive home. Resume driving only when your surgeon says your vision meets legal and practical safety requirements.

Time away from work depends on your vision, job, positioning needs, and repair method. Desk work may be possible sooner than physical work, driving, machinery use, or work at height.

Risks and possible complications

Retinal surgery can protect sight, but it cannot guarantee that the retina will remain attached or that vision will return to its previous level.

Possible complications include:

Silicone oil may need a later operation for removal. A gas bubble expands when air pressure falls, which is why flying and high-altitude travel are unsafe until it is gone.

- The retina detaching again and requiring another operation
- Cataract, particularly after vitrectomy
- Raised or lowered pressure inside the eye
- Bleeding inside or around the eye
- Infection inside the eye
- Scar tissue that pulls on the retina

- Double vision or a change in glasses prescription after a buckle
- Inflammation, discomfort, or swelling
- Reduced peripheral, detailed, or colour vision

Results and follow up

The surgeon can usually tell at the end of the procedure whether the retina is in position. Follow-up examinations confirm whether it remains attached and whether eye pressure and healing are satisfactory.

An appointment is often arranged soon after surgery, followed by further visits over the next several weeks. These are routine even if the eye feels comfortable.

Vision is usually blurred at first. A gas bubble, swelling, dilating drops, or a changing glasses prescription can affect what you see. Improvement may continue for weeks or months.

How much sight returns is influenced by the detachment's cause and whether the macula was involved. Even with successful reattachment, some distortion, reduced sharpness, or loss of peripheral vision may remain.

Alternatives

A detached retina generally cannot be corrected with glasses, medicines, or eye exercises. The alternatives depend on the type and extent of the problem.

Laser treatment or freezing alone may seal a retinal tear before significant detachment occurs. It is less invasive, but it cannot usually return a broadly detached retina to position.

Pneumatic retinopexy avoids a larger operation and may be performed in an outpatient setting. It only suits certain tear locations, requires careful positioning, and may lead to another procedure if the retina does not stay attached.

Scleral buckle surgery supports the retina from outside the eye and can be useful in selected eyes. It may change the eye's focusing power and can cause temporary or persistent double vision.

Vitrectomy can treat complex tears, bleeding, and scar tissue. It involves entering the eye and has risks such as cataract formation and restrictions if gas is used.

Treatment of an underlying illness may be appropriate when fluid collects without a retinal tear, such as with inflammation or abnormal blood vessels. Surgery may not address the cause

in these cases.

Observation is only appropriate in carefully selected situations. For an established detachment that threatens vision, waiting may allow more retina to detach and may reduce the chance of useful visual recovery.

When to call your healthcare team

Contact your eye team promptly if you notice increasing redness, swelling, discharge, pain not controlled by recommended medicine, or worsening nausea. Also call if you cannot use your drops or maintain the required position.

Seek urgent same-day eye care for:

Go to an emergency department if severe symptoms occur and you cannot reach the eye team. Trouble breathing, fainting, or signs of a severe allergic reaction after treatment also require emergency care.

- A sudden increase in flashes or floaters
- A new curtain, shadow, or missing area of vision
- A sudden drop in vision
- Severe eye pain, headache, halos, or vomiting
- An eye injury during recovery

Common questions

Will I be asleep?

You may be awake with local anaesthetic and sedation, or fully asleep under general anaesthesia. The choice reflects the procedure, your health, and the anaesthesia plan.

Can I drive home?

No. Arrange for someone to take you home. Do not drive again until your eye team confirms it is safe.

How painful is retinal detachment repair?

Anaesthesia should prevent pain during surgery. Mild aching, grittiness, or swelling afterward is common. Severe or increasing pain needs prompt assessment.

When will I know whether it worked?

The surgeon can assess the retina's position immediately, but follow-up examinations show whether it stays attached. The final visual result may take months to become clear.

How long does the gas bubble last?

It may remain for days or several weeks, depending on the gas used. Your team will tell you when it has gone and when flying is safe.

Will my vision return to normal?

Some people regain useful vision, but complete recovery is not guaranteed. The outcome is strongly affected by whether the macula detached and how long it remained detached.

Sources

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