PROCEDURE

Intravitreal injection

An intravitreal injection delivers medicine through the eye wall into the gel inside the eye.

PURPOSE
Deliver medicine directly to the retina and vitreous

PROCEDURE TYPE
Therapeutic, minimally invasive injection through the eye wall

WHERE IT IS DONE
Outpatient clinic or operating theatre

ANAESTHESIA
Local anaesthetic eye drops or gel

HOW LONG IT TAKES
About 10 to 20 minutes; injection takes seconds

PREPARATION
Usually no fasting; review medicines, infection, and pregnancy

RECOVERY
Same day; no driving until vision clears

MAIN RISKS
Eye infection, retinal detachment, bleeding, raised eye pressure

RESULTS
Assessed over days to weeks with vision tests and scans

Overview

An intravitreal injection places medicine into the vitreous, the clear gel filling the centre of your eye. This allows a high amount of medicine to reach the retina at the back of the eye while limiting exposure elsewhere in the body.

The injection passes through the white part of the eye. Anaesthetic drops or gel numb the surface first. Most people feel pressure or a brief sharp sensation rather than ongoing pain.

Intravitreal injections are usually outpatient procedures. Depending on the condition and medicine, you may need one injection, a short course, or repeated treatment over months or years.

Why the procedure is performed

The procedure is used to treat conditions affecting the retina or the inside of the eye.

Anti-VEGF medicines block a protein that encourages abnormal blood vessels to grow or leak. They are commonly used for wet age-related macular degeneration, diabetic macular oedema and swelling caused by retinal vein occlusion.

Steroid medicines may be used to reduce inflammation or retinal swelling. Steroid injections and implants can last longer than some other treatments, but they can raise eye pressure and increase the chance of cataracts.

Antibiotics or antifungal medicines may be injected when there is a serious infection inside the eye. Less commonly, other medicines are delivered this way for specific retinal or inflammatory conditions.

Who should and should not have it

Your eye specialist may recommend an injection when scans and eye tests show that medicine delivered inside the eye could protect or improve your vision. The expected benefit depends on the condition, how long it has been present and whether the retina has permanent damage.

An injection may be avoided or delayed when:

Tell your specialist if you are pregnant, could be pregnant or are breastfeeding. Some intravitreal medicines, particularly anti-VEGF medicines, may not be suitable during pregnancy unless the expected benefit outweighs the possible risk.

Also mention recent stroke, heart attack, blood clots, glaucoma, eye surgery or problems with previous injections. These do not always prevent treatment, but they may affect the medicine, timing or monitoring plan.

- There is an infection in or around the eye
- The eye is severely inflamed
- You previously had a serious allergic reaction to the proposed medicine
- Your general health makes the medicine unsuitable at that time
- The likely benefit is too small to justify the risks and treatment burden

How to prepare

Follow the treating facility's own instructions, as they take priority over general advice in this

article.

Fasting is not usually required because the procedure normally uses local anaesthetic rather than sedation. You can generally take your usual medicines and eat normally unless your facility tells you otherwise.

Give the team an up-to-date list of medicines and allergies. Blood thinners like warfarin or apixaban are not routinely stopped for many eye injections because stopping them can create other risks. Do not stop a prescribed blood thinner unless the clinician responsible for it and your eye team have told you to do so.

Tell the facility before attending if you develop a red, sticky or painful eye, or an infection near the eye. Avoid eye makeup on the day. If you wear contact lenses, ask when to remove them and when they can be used again.

Arrange for someone to take you home. Your vision may be blurred from drops, ointment, the medicine or an eye patch.

What happens during the procedure

You will usually sit in a reclining chair or lie on a treatment couch. The team confirms your identity, the eye being treated and the medicine being given.

Anaesthetic drops or gel numb the eye. The skin around your eye and the eye surface are cleaned with an antiseptic, usually povidone-iodine. This step lowers the risk of infection. A small instrument may hold your eyelids open so that you do not need to worry about blinking.

You will be asked to look in a particular direction. The specialist measures the injection site and passes a very fine needle through the white part of the eye into the vitreous. The injection itself takes only a few seconds.

You may see a flash, moving shapes or bubbles. Pressure in the eye may be checked afterward, particularly if you have glaucoma or receive a larger-volume medicine or implant.

Recovery and what to expect afterward

Mild grittiness, watering or aching can occur as the anaesthetic wears off. Simple pain relief may be appropriate if your healthcare team says it is safe for you. Severe or increasing pain is not expected.

You can usually eat and drink normally straight away. A red patch on the white of the eye is common, especially if you take blood thinners. It can look noticeable but often clears gradually

without treatment. Small floaters or bubbles may also be visible for a few days.

Avoid rubbing the eye. Follow your facility's advice about swimming, contact lenses, makeup and strenuous activity. Routine antibiotic drops are not always prescribed, so use only the drops you have been given.

Do not drive home. Wait until your vision has returned to a safe level and you meet any restrictions given by the facility. Many people return to desk work the next day, although blurred vision or discomfort may make a longer break sensible. Work involving driving, machinery, dust or contaminated water may require more time off.

Risks and possible complications

Most injections do not cause a serious problem, but complications can affect vision and may require urgent treatment.

Important risks include:

Steroids like prednisone or hydrocortisone can increase eye pressure and speed up cataract formation. Anti-VEGF medicines have warnings about blood clots that could contribute to stroke or heart attack, although the individual risk after an eye injection is uncertain and influenced by your health history.

- Endophthalmitis: an infection inside the eye that can cause pain, redness and worsening vision
- Retinal tear or detachment: separation of the light-sensitive retina from the back of the eye
- Raised eye pressure: usually temporary, but sometimes requiring treatment
- Bleeding: commonly a harmless surface blood spot; rarely bleeding inside the eye
- Damage to the lens: an uncommon injury that can contribute to cataract
- Inflammation: a reaction inside the eye, sometimes related to the medicine

Results and follow up

The injection site does not usually need stitches. Your eye specialist will arrange follow-up based on the condition and medicine.

Vision may remain blurred immediately afterward. Improvement, when it occurs, is usually assessed over days or weeks rather than minutes. Some injections mainly aim to prevent

further vision loss, so you may not notice a clear improvement.

Follow-up commonly includes a vision test, examination and optical coherence tomography, or OCT. This painless scan shows swelling and fluid within the retina. The results help determine whether another injection is needed and when it should be given.

Keep scheduled appointments even if your vision feels unchanged. Delaying a planned course may reduce the treatment's benefit.

Alternatives

The realistic alternatives depend on the condition and the aim of treatment.

Ask what is likely to happen with each option, including no treatment, before deciding.

- Observation: avoids injections but allows the condition to be monitored without active treatment. Vision may worsen while waiting if the disease remains active.
- Laser treatment: can seal or reduce leaking blood vessels in selected conditions. It may reduce injection needs, but it can leave retinal scars and is unsuitable near some central areas.
- Photodynamic therapy: uses a light-activated medicine to close abnormal vessels. It is useful for selected forms of macular disease but is not a full substitute for anti-VEGF treatment in many cases.
- A longer-acting steroid implant: may mean fewer procedures, but carries greater risks of cataract and raised eye pressure.
- Surgery: may be appropriate for problems such as retinal detachment, scar tissue or bleeding that does not clear. It is more invasive and is not an alternative for every retinal condition.
- No treatment: avoids procedure-related risks and appointments, but may allow preventable or permanent vision loss.

When to call your healthcare team

Seek urgent same-day assessment from your eye clinic or an emergency eye service for:

Call emergency services for symptoms of stroke or heart attack, such as sudden one-sided weakness, difficulty speaking, severe chest pressure or major breathing difficulty.

Mild scratchiness, a small red patch and a few stable bubbles or floaters can occur during routine recovery. Contact the clinic during normal hours if these are not settling or if you are

unsure about your symptoms.

- Increasing or severe eye pain
- Worsening redness rather than a stable surface blood spot
- A marked drop in vision
- Increasing floaters, flashes or a curtain-like shadow
- Strong light sensitivity, swelling or pus-like discharge

Common questions

Will I be asleep?

Usually not. Anaesthetic drops or gel numb the eye while you remain awake. Sedation and general anaesthesia are uncommon for adults.

Can I drive home?

No. Your vision may be blurred, and your eye may be patched. Arrange transport and drive again only when your vision is clear and the facility says it is safe.

How painful is it?

Most people feel brief pressure, a pinch or a few seconds of discomfort. Grittiness afterward is common. Severe or worsening pain needs urgent assessment.

When will I know if it worked?

Your specialist usually assesses the effect over days to weeks using your vision and retinal scans. Some treatments preserve vision rather than improve it.

How many injections will I need?

This is based on the condition, the medicine and how the retina responds. Some people need a short series; others need ongoing injections with intervals adjusted from scan results.

Can I have injections in both eyes?

Yes, when both eyes need treatment. Some facilities treat both on the same day using separate sterile equipment and medicine for each eye; others use different appointments.

Sources

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