PROCEDURE

Eye muscle repair

Eye muscle repair is surgery that repositions one or more eye muscles to improve eye alignment.

PURPOSE
Improve eye alignment and reduce related vision problems

PROCEDURE TYPE
Therapeutic surgery to reposition eye muscles

WHERE IT IS DONE
Operating theatre, usually as day surgery

ANAESTHESIA
General, or local with sedation for selected adults

HOW LONG IT TAKES
About 30 minutes to 2 hours

PREPARATION
Fasting, medication review, and arranged transport home

RECOVERY
Same day; no driving until vision and anaesthesia effects recover

MAIN RISKS
Residual misalignment, double vision, infection, eye injury

RESULTS
Early alignment immediately; final result over several weeks

Overview

Eye muscle repair is an operation to improve the alignment of eyes that do not point in the same direction. This condition is called strabismus, or a squint.

The surgeon changes the position or tension of one or more muscles attached to the outside of the eye. Surgery may involve one or both eyes, even when only one eye appears to turn.

The eye is not removed from its socket. The operation usually does not change whether you need glasses or restore vision already reduced by amblyopia, sometimes called lazy eye.

Why the procedure is performed

Eye muscle repair may be offered to:

Both children and adults can have the operation. In children, alignment may support visual development. In adults, surgery may treat long-standing strabismus or a problem caused by an eye muscle disorder, nerve injury, thyroid eye disease, trauma, or previous surgery.

- Make the eyes look straighter
- Reduce double vision
- Improve how the eyes work together
- Correct an uncomfortable or unusual head position
- Widen the useful field of vision in some forms of strabismus
- Reduce social or emotional effects caused by visible misalignment

Who should and should not have it

Surgery may be considered when strabismus is persistent, affects vision or head position, causes double vision, or is important to you because of its appearance. Measurements are used to identify the muscles involved and the size of the eye turn.

The procedure may be avoided or delayed when:

A recent or rapidly changing eye turn may need investigation before surgery. Previous operations or scarring can make surgery more complex.

Surgery cannot guarantee perfectly straight eyes. Some people need another operation later.

- Glasses, prisms, observation, or another treatment are likely to work well enough
- The eye turn is changing and stable measurements are needed
- An active eye or significant eyelid infection is present
- Thyroid eye disease or another underlying condition is still active
- An anaesthetic or healing risk needs further assessment

How to prepare

Your treating facility's instructions take priority because fasting rules, medicines, and arrival times differ.

Tell the team about your medicines, allergies, previous reactions to anaesthesia, bleeding problems, and other health conditions. Include non-prescription medicines and supplements.

Do not stop a blood thinner like warfarin or apixaban unless the team responsible for your procedure tells you how and when.

You may be asked to:

Contact the facility if you develop a significant illness, fever, or eye infection before the operation. They will decide whether it should go ahead.

- Stop eating and drinking for a set time before anaesthesia
- Avoid contact lenses, eye makeup, and skin products on the day
- Arrange for an adult to take you home
- Arrange help for a child or dependent adult after surgery

What happens during the procedure

Children usually receive a general anaesthetic. Many adults also have general anaesthesia, although selected adults may receive local anaesthesia with sedation.

The surgeon holds the eyelids open and makes a small opening in the thin tissue covering the white of the eye. The muscles are reached through this opening, so there is usually no skin incision.

A muscle may be moved backward to weaken its pull or shortened to strengthen it. Other techniques fold or reposition the muscle. Stitches secure the muscle and close the surface tissue; these usually dissolve.

Some adults and older children may have an adjustable stitch, allowing the surgeon to fine-tune the muscle position afterward using numbing drops. This method is not suitable for everyone.

Recovery and what to expect afterward

Soreness, grittiness, watering, and a pulling feeling are common. The white of the eye may look bright red or swollen. Discomfort usually improves within several days, while redness can take several weeks to clear. Use pain relief and eye drops as instructed.

You can usually eat and drink once you are awake and no longer feeling sick. Start with light food if your stomach is unsettled.

Rest on the day of surgery and avoid rubbing the eye. Your team will tell you when you can shower, exercise, swim, wear contact lenses, or return to contact sports. Follow their

restrictions.

You cannot drive home. Do not drive while affected by anaesthesia, blurred or double vision, pain, or medicines that reduce alertness. Resume only when the facility's restriction has ended and you can see safely and meet local driving rules.

Many adults return to desk work within several days to a week. More time may be needed for physical work or persistent double vision. Children often return to school after several days, following the surgical team's advice.

Risks and possible complications

Possible risks include:

A small change in glasses prescription can occur, but surgery does not normally remove the need for glasses.

Damage to the eye wall, reduced blood supply to the front of the eye, severe infection, or permanent loss of vision are uncommon but serious complications. Anaesthesia also has risks, which the team will discuss based on your health.

- The eyes remaining misaligned or becoming overcorrected
- Temporary or persistent double vision
- Infection, bleeding, or significant inflammation
- Scarring or a visible bump over a stitch
- A muscle slipping from its intended position
- Needing another operation

Results and follow up

The new alignment can usually be seen soon after surgery, but swelling and changing muscle tension make the early appearance unreliable. Temporary double vision can occur while the brain adapts.

Alignment generally settles over the following weeks. Your surgeon will check eye movement, healing, double vision, and whether further treatment is needed. Keep routine appointments even if the eye feels comfortable.

Children may still need glasses, patching, or other amblyopia treatment. Adults may temporarily need a prism or another adjustment if double vision continues.

Alternatives

Alternatives depend on the type and size of the eye turn.

Choosing no surgery is also an option when symptoms and appearance are acceptable to you.

- Observation: avoids treatment but leaves the alignment unchanged and may allow symptoms to continue.
- Glasses: can correct an eye turn linked to focusing, especially in children, but not every type of strabismus.
- Prism lenses: shift images to reduce double vision. They work best for smaller, stable misalignments but may cause distortion or thick lenses.
- Patching or atropine treatment: can improve amblyopia in children but does not repair the eye muscles.
- Orthoptic exercises: help selected problems, such as convergence insufficiency, but not most fixed eye turns.
- Botulinum toxin injection: temporarily weakens a selected muscle. Its effect may wear off, and alignment can be less predictable.
- Treatment of an underlying condition: may be needed first when thyroid disease, nerve problems, or another illness affects alignment.

When to call your healthcare team

Expected redness, mild soreness, watering, and temporary double vision can usually be discussed at routine follow-up.

Contact the surgical team promptly or seek same-day medical advice for increasing pain, swelling, redness, pus-like discharge, fever, repeated vomiting, or a sudden major change in eye movement or alignment.

Seek emergency care for sudden loss of vision, severe or rapidly worsening eye pain, heavy bleeding, severe breathing difficulty, collapse, or marked swelling with serious illness after the procedure.

Common questions

Will I be asleep?

Children and many adults receive general anaesthesia. Some adults can have local anaesthesia with sedation. Your team will explain the planned option before you consent.

Can I drive home?

No. Arrange for someone to take you home. Do not drive until the anaesthetic restrictions have ended and your vision is clear enough to drive safely.

How painful is eye muscle repair?

Most people have soreness, grittiness, or a pulling sensation rather than severe pain. Severe or worsening pain needs prompt medical advice.

When will I know whether it worked?

You will see an early change, but swelling can affect alignment. The result is usually judged over the following weeks.

Will I still need glasses?

Possibly. The operation changes muscle position, not the eye's focusing prescription. Children may also still need amblyopia treatment.

Can the eye turn come back?

Yes. Alignment can change during healing, as a child grows, or if an underlying condition changes. Further prism treatment, injections, or surgery may be needed.

Sources

- MedlinePlus Medical Encyclopedia: Eye muscle repair , US National Library of Medicine
- NHS: Squint surgery , National Health Service
- Strabismus Surgery , American Association for Pediatric Ophthalmology and Strabismus
- EyeWiki: Strabismus Surgery, Horizontal , American Academy of Ophthalmology