CONDITION

Strabismus

Strabismus is a condition in which the eyes do not point in the same direction.

WHAT IT IS
Misalignment of the eyes

BODY SYSTEM
Eyes and vision

MAIN SYMPTOMS
Misaligned eyes, double vision, eye strain, reduced depth perception

WHAT CAUSES IT
Eye-control imbalance, sometimes nerve or vision disorders

HOW IT IS DIAGNOSED
Eye alignment tests and a complete eye examination

MAIN TREATMENT
Glasses, amblyopia therapy, prisms, or eye-muscle surgery

CAN IT BE CURED?
Sometimes - treatment can restore eye alignment

IS IT AN EMERGENCY?
Sometimes - sudden double vision or neurological symptoms

LONG-TERM OUTLOOK
Often manageable; recurrence or lasting vision loss can occur

Overview

Strabismus is a condition in which the eyes do not point in the same direction. One eye may look straight ahead while the other turns inward, outward, upward, or downward. The turn may be constant or may come and go.

"Cross-eyes" usually describes eyes that turn inward, but strabismus includes several forms. An inward turn is called esotropia , while an outward turn is called exotropia . A vertical turn may be called hypertropia or hypotropia , depending on its direction.

Strabismus can begin in infancy, later in childhood, or during adulthood. It may affect one eye more often, or the eyes may take turns being misaligned.

The condition matters because the brain normally combines the image from each eye into one three-dimensional picture. Misalignment can interfere with this process. Young children may

begin ignoring the image from one eye, which can lead to amblyopia, often called "lazy eye." Adults are more likely to experience double vision because their brains are less able to ignore the second image.

Strabismus can also affect reading, depth perception, confidence, social interactions, and comfort during close work. Treatment can be useful at any age, although early assessment is especially important for a child whose vision is still developing.

Symptoms

The most visible sign is that the eyes do not appear to point in the same direction. This may happen all the time or only when the person is tired, ill, daydreaming, or looking at a particular distance.

Other possible symptoms include:

Babies and young children often do not report double vision. Their brains may suppress, or ignore, the image from the misaligned eye. This can make the condition less noticeable while increasing the risk of amblyopia.

A baby's eyes may occasionally wander during the first few months of life as visual control develops. A frequent or constant turn still needs assessment. An eye turn that continues beyond early infancy should not be dismissed as something the child will necessarily outgrow.

Some children only appear to have crossed eyes because of a broad nasal bridge or skin folds near the inner corners of the eyes. This is called pseudostrabismus . An eye examination can distinguish it from true misalignment.

- Double vision or overlapping images
- Reduced depth perception
- Eye strain, headaches, or difficulty concentrating
- Closing or covering one eye, especially in bright light
- Tilting or turning the head to see more clearly
- Trouble judging steps, distances, or moving objects

Causes and risk factors

Strabismus develops when the systems that control eye position do not keep the eyes properly aligned. Six muscles move each eye, but their activity is coordinated by nerves and

areas of the brain involved in vision and movement.

In many children, there is no single identifiable cause. The condition can run in families, although inheritance is not always straightforward.

Some forms are related to focusing. For example, a child who is farsighted may focus very strongly to see clearly. Focusing is linked to inward eye movement, so this effort can cause or worsen an inward turn.

Other possible causes or associated conditions include:

Having one of these risk factors does not mean strabismus will develop. In adults, a new eye turn may be caused by a problem that was present in childhood and later became harder to control. It may also arise because of a new eye, muscle, nerve, or brain condition.

- Poor vision in one eye from another eye condition
- Premature birth or developmental conditions
- Disorders affecting the eye muscles or the nerves controlling them
- Thyroid eye disease
- Stroke, head injury, or other neurological conditions
- Previous eye surgery or injury

Diagnosis

Strabismus is diagnosed through an eye examination. Photographs or observations at home can help show when the eye turns, but they cannot confirm the diagnosis or measure the alignment accurately.

The examination may include:

Young children may receive eye drops that temporarily relax focusing and enlarge the pupils. This allows a more accurate measurement of farsightedness, nearsightedness, or astigmatism.

The clinician will also ask when the eye turn started, whether it is constant, and whether there is double vision, pain, injury, or another medical condition.

Brain imaging, blood tests, or other investigations are not needed for every case. They may be recommended when strabismus begins suddenly, eye movements are limited, or the examination suggests an underlying nerve, muscle, thyroid, or neurological problem.

- Checking vision in each eye separately
- Watching how light reflects from the eyes

- Covering one eye at a time to reveal or measure a turn
- Testing eye movements and three-dimensional vision
- Measuring whether glasses are needed
- Examining the front and back of the eyes

Treatment and management

Treatment aims to improve alignment, help the eyes work together, relieve double vision, and protect vision development. The best approach is based on the type of strabismus, its cause, age at onset, vision in each eye, and whether the turn is constant.

Glasses may correct farsightedness, nearsightedness, or astigmatism. In some children with inward-turning eyes, glasses greatly reduce or fully control the misalignment. Other people still have an eye turn while wearing their glasses.

Prism lenses bend light so that the eyes need to move less to combine images. They may relieve double vision in some adults, particularly when the misalignment is small or stable. Prisms do not work for every direction or size of eye turn.

Amblyopia treatment may include covering the stronger eye with a patch or using drops that temporarily blur it. This encourages the brain to use the weaker eye. It treats reduced vision from amblyopia, not usually the eye alignment itself. Alignment treatment may still be needed.

Eye exercises , also called orthoptic or vision exercises, can help certain coordination problems, especially convergence insufficiency. Convergence insufficiency makes it difficult to turn both eyes inward for close work. Exercises are not an effective treatment for every form of strabismus.

Botulinum toxin injections are used in selected cases to temporarily weaken an eye muscle. Their effects and role differ according to the type of misalignment.

Eye-muscle surgery changes the position or tension of one or more muscles on the surface of the eye. It does not remove the eye, and surgery usually does not take place inside the eyeball. Some people need more than one operation because alignment can change or remain incomplete.

Treatment during adulthood can still improve double vision, head position, eye alignment, and quality of life. Strabismus surgery is not limited to cosmetic appearance.

Complications

In childhood, the main concern is amblyopia. This is reduced vision caused by abnormal visual development. If the brain repeatedly ignores one eye, that eye may not develop normal sight even when its structure is healthy.

Strabismus can also reduce binocular vision, meaning the ability to use both eyes together. This may affect depth perception and the ability to judge distance.

Adults may have persistent double vision, eye strain, headaches, or an uncomfortable head position. These symptoms can interfere with driving, reading, work, and walking on uneven ground.

Possible complications of treatment depend on the method used. After surgery, the eyes may remain partly misaligned, become misaligned in another direction, or move out of alignment again later. Infection and serious damage to vision are uncommon but possible surgical risks. The eye care team should explain the relevant risks before a procedure.

Prevention

Many cases of strabismus cannot be prevented. This is particularly true when the condition is related to inherited traits, early development, or a disorder affecting the eye muscles or nerves.

Early detection can help prevent avoidable vision loss from amblyopia. Children should receive recommended vision screening and a full eye assessment if an eye turn is suspected, even if it only happens occasionally.

Wearing prescribed glasses and following an amblyopia treatment plan can support vision development. Managing an underlying condition, such as thyroid eye disease or diabetes, may help reduce further eye or nerve problems, but it cannot guarantee that strabismus will not occur.

Living with it and what to expect

The course of strabismus differs by type. Some childhood eye turns become well controlled with glasses. Others continue and need additional treatment. Alignment may also change as a child grows.

Amblyopia treatment often takes place over months or longer. Progress is checked by measuring vision in each eye. Regular follow-up matters because treatment may need adjustment as vision improves or glasses prescriptions change.

After eye-muscle surgery, the eyes may look red and feel sore or gritty for a time. Alignment can shift during healing. Surgery may produce long-lasting improvement, but it does not guarantee permanent straight alignment or perfect depth perception. Additional glasses, prisms, or surgery may be needed later.

Adults with longstanding strabismus may have little or no double vision because the brain learned to suppress one image. If alignment changes, double vision can appear. Adults who develop strabismus suddenly may need investigation as well as treatment for the visual symptoms.

Many people with strabismus study, work, drive when they meet vision requirements, and take part in everyday activities. Practical adjustments may be needed if depth perception or double vision remains limited. Routine eye follow-up helps track alignment, vision, and the effects of treatment.

When to get medical help

Arrange an eye examination if you notice that your or your child's eye turns inward, outward, upward, or downward. A child should be assessed even if the turn is occasional or there are no reported vision problems.

Seek prompt medical assessment for:

Call emergency services for sudden double vision or eye misalignment accompanied by severe headache, facial drooping, weakness, numbness, confusion, difficulty speaking, loss of balance, or other possible stroke symptoms. Sudden symptoms after a serious injury also need emergency care.

Stable, previously assessed strabismus without new symptoms is usually managed through routine follow-up rather than emergency care.

- New or worsening double vision
- A new eye turn during adulthood
- An eye that no longer moves normally
- New drooping of an eyelid or a change in pupil size
- Strabismus after a head or eye injury
- New loss, blurring, or dimming of vision
- A white pupil seen directly or repeatedly in photographs

Common questions

Is strabismus the same as lazy eye?

No. Strabismus means the eyes are misaligned. "Lazy eye" usually means amblyopia, where vision has not developed normally in one eye. Strabismus can cause amblyopia, but a person can have either condition without the other.

Can strabismus go away on its own?

Some intermittent eye turns may become less noticeable, but persistent strabismus should not be expected to disappear without assessment. In children, waiting can allow amblyopia to develop or become harder to treat. Treatment needs depend on the type and cause.

Will glasses straighten crossed eyes?

They can in some cases. Glasses are especially helpful when an inward turn is linked to farsightedness and focusing effort. Other forms of strabismus may improve only partly or not at all with glasses.

Can adults have strabismus treatment?

Yes. Adults may benefit from prisms, treatment of an underlying cause, botulinum toxin, or eye-muscle surgery. Treatment can reduce double vision, improve head position, and change eye alignment even when the condition began in childhood.

Does strabismus surgery permanently fix the eyes?

Surgery can produce lasting improvement, but no operation can guarantee permanent alignment. The eyes may remain slightly misaligned or shift over time. Some people need another operation or continued use of glasses or prisms.

Does screen time cause strabismus?

Ordinary screen use is not considered a direct cause of most strabismus. Close work can make eye strain or an existing coordination problem more noticeable. A new or repeated eye turn still needs an eye examination rather than being assumed to come from screens.

Sources

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