Strabismus in Children

What is strabismus?

Strabismus is a common eye condition among children. It is when the eyes are not lined up properly and they point in different directions (misaligned). One eye may look straight ahead while the other eye turns in, out, up, or down. The misalignment can shift from one eye to the other.

Strabismus affects vision, since both eyes must aim at the same spot together to see properly. If someone's eyes are lined up properly during childhood, vision should develop well. But if the eyes are not aligned, a condition called amblyopia can develop. This is when the misaligned eye has weaker vision.

Strabismus is when the eyes are not lined up properly. Notice that light reflects in different places in both eyes.

What causes strabismus?

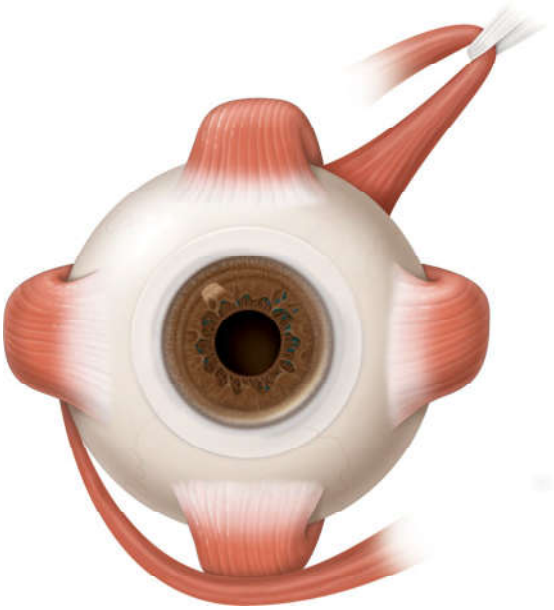
To line up and focus both eyes on a single target, all muscles in both eyes must work together. The brain controls these muscles. Children who have strabismus may have disorders affecting their brain. Some of those problems may include:

- cerebral palsy
- Down syndrome
- hydrocephalus (extra fluid in the brain)
- brain tumor
- premature birth

Having a cataract (cloudiness of the eye's naturally clear lens) or eye injury can also cause strabismus. Most children with strabismus, however, have none of these problems.

Having family members with strabismus can increase a child's chance of having it themselves.

There are six eye muscles that control eye movement. One muscle moves the eye to the right, and one muscle moves the eye to the left. The other four muscles move the eye up, down, and at an angle. In order to focus on a single image, all six eye muscles must work together.



Eye muscles

How does strabismus affect vision?

With normal vision, both eyes aim at the same spot. Our brain combines the two images from our eyes into a single, three-dimensional (3-D) image. This is how we can tell how near or far something is from us (called depth perception).

When one eye is out of alignment, two different pictures are sent to the brain. In a young child, the brain learns to ignore the image of the misaligned eye. Instead, it sees only the image from the straight or better-seeing eye. As a result, depth perception may be affected.

Adults who develop strabismus after childhood often have double vision. This is because their brains have already learned to receive images from both eyes. Their brains cannot ignore the image from the turned eye, so they see two images.

Signs of strabismus

You may notice that your child's eyes look in different directions at the same time. You may also notice that your child closes one eye or tilts their head when looking at an object. This may be your child's way of getting both eyes to work together—a sign of strabismus. Also, your child may squint with one eye when in bright sunlight.

Your child's pediatrician, school nurse, or teacher may notice these signs, too. If you think your child might have strabismus, visit a pediatric ophthalmologist for a complete eye exam.

Pseudostrabismus

When children are less than a year old, their eyes may look crossed when they really are not. This is called "pseudostrabismus." It usually happens if the child has a wide, flat nose or a fold of skin at the inner eyelid.

A child can outgrow pseudostrabismus, but not strabismus.

Strabismus types

There are 3 common types of strabismus.

- **Infantile esotropia** is when a baby or young child has eyes that cross inward.
- **Accommodative esotropia** is the most common type of strabismus in children over 2 years old. One eye may turn inward (toward the nose) when focusing on a close-up or distant object.

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- **Exotropia.** This is when one eye turns outward (away from the nose) when looking at something far away. This can happen sometimes when a child is tired, sick, or daydreaming. A child might also squint with one eye in bright sunlight.

Strabismus treatment

One or more types of strabismus treatment may be recommended, depending on your child's age and eye alignment.

Babies and very young children with an inward turning eye (esotropia) may need surgery or glasses. Strabismus surgery on the eye muscles helps align eyes properly and allows good vision to develop.

Children over 2 years old with esotropia, may be prescribed special eyeglasses to help focus and straighten the eyes. Occasionally prisms are used to help with focus as well. A prism is a clear, wedge-shaped lens that bends (refracts) light rays. A prism can be attached to eyeglasses or made as part of the lens.

Patching or blurring might be recommended to help strengthen a misaligned eye that is weaker than the other. The child is prevented from using their stronger eye by wearing an eye patch or using blurring eye drops. This forces them to use the weaker eye, helping to strengthen it over time.

Sometimes children are taught to do certain eye muscle exercises to help focus both eyes inward.

If glasses, prisms, patching or eye exercises do not help, surgery is recommended.

Patching a child's strong eye helps to strengthen the weaker eye.

Strabismus surgery

Surgery is often done to correct the alignment of a child's eyes. Strabismus surgery is usually done in an outpatient surgery center. Your child will be given a general anesthesia to be fully asleep. The ophthalmologist makes a small cut in the tissue covering the eye to reach the eye muscles. The muscles are then repositioned to help the eyes point in the same direction. This may need to be done in one or both eyes. And some children may need a second surgery to align their eyes.

After surgery, most children can get back to their daily routine in about 2–3 days.

As with any surgery, there are risks with strabismus surgery. While rare, they can be serious. Your ophthalmologist will discuss these risks and benefits of surgery.

Strabismus surgery is usually a safe and effective way to treat eye misalignment. However, it does not replace eyeglasses, patching or blurring if the ophthalmologist recommends them too. Strengthening your child's eye muscles is very important for good vision.

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Summary

Strabismus is when the eyeballs are not lined up properly and they point in different directions. Strabismus affects vision, since both eyes must aim at the same spot together to see properly. It is very important for infants and children with strabismus to be treated. This is because a child with strabismus will develop weaker vision in the turned eye.

Strabismus is often treated with surgery. This surgery adjusts the muscles that are keeping the eyes from aligning properly. Other treatment options include wearing eyeglasses and/or using prisms to help the eyes focus.

If you have any questions about your child's eyes or vision, speak with an ophthalmologist. He or she is committed to protecting your child's sight.

Get more information about strabismus from EyeSmart—provided by the American Academy of Ophthalmology—at **aao.org/strabismus-link**.

COMPLIMENTS OF:

BRYAN VEKOVIUS, M.D.

OCULOPLASTIC SURGERY AND
NEURO-OPHTHALMOLOGY

450 ASHLEY RIDGE BLVD.
SHREVEPORT, LA 71106

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