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9 Exotropia: Eyes That Turn Out

Alex was almost four years old when his parents first noticed his left eye drifted outward. He tended to close the eye whenever he was outside on a sunny day. Over the following few months the closing got worse, to the point that his older brother started calling him Popeye. At first the eye drifted outward only occasionally, and just for a moment. But gradually the deviation became more frequent. It began to happen both outdoors and indoors, and the eye stayed out for longer periods of time.

Alex has exotropia—sometimes called "wall eyes"—the condition in which one eye turns out. It is not common, but in any group of several hundred otherwise normal children there will probably be at least one with exotropia. Like accommodative esotropia, exotropia usually starts between the ages of 2 and 5 and is frequently first seen

LEFT EXOTROPIA. The right eye is looking at the camera, but the left eye is turned outward. The deviation, which measures about 20 degrees by the Hirshberg method, is likely intermittent, at least initially. Typically, the eyes are better aligned when looking at near than at distant objects.

when the child is tired or sick. It rarely starts before 6 months of age.

In its early stages, the deviation lasts only a few seconds and goes away with a blink or a change of gaze.

In the typical childhood-onset exotropia, one eye (or alternate eyes) turns outward briefly and intermittently when the child looks at something 10 or more feet away. Parents may have difficulty seeing the deviation in its early stages. It lasts only a few seconds and goes away with a blink or a change of gaze. What usually happens is that as the parent approaches to look at the child more closely, the child looks at the parent and the eyes straighten.

Over time—sometimes weeks, sometimes months—one eye or the other will start turning out more often and more easily, but only when the child is looking across the room or farther. The deviation usually progresses, either in degree or, more typically, in the frequency and the duration of each occurrence.

It would be nice if we knew the cause, but unfortunately we don't. Children with exotropia have normal refractive errors; their need for glasses is no different from that of children with no strabismus. One might reason that, if hyperopia (farsightedness) causes esotropia and exotropia is the opposite of esotropia, then myopia (nearsightedness) must cause exotropia. This reasoning is logical but it is not supported by facts. Myopic children have no more exotropia than children who are not myopic. Like other forms of strabismus, exotropia can run in families. But the exact pattern of inheritance is unclear, and in many cases it occurs with no family history at all.

Double vision and suppression: Children who have one eye that turns out are very likely to see two images: that is, they see double. By blinking hard or rubbing one eye, they may restore the alignment and eliminate the double vision. If that doesn't work, they may close or cover the eye. Closing one eye outdoors, especially in the sunlight, is a common and typical sign of intermittent exotropia. Some children close one eye while watching television.

Gradually, children with exotropia may deal with their double vision by unconsciously suppressing the image from the deviating eye (in the same way as children with esotropia do). Once the second image is suppressed, they are not able to tell whether the eye is turned out or is aligned with the other. If amblyopia ("lazy eye") develops as a result, vision is usually not as poor as it may be in children with esotropia.

Gradually the deviation may become more constant. If one eye is turning out often and staying out when the child is looking far away, the eye may gradually start to turn out intermittently when the child is looking at something near. In time—perhaps months or even years—one eye might turn out constantly regardless of where the child is looking.

Treatment If amblyopia has developed, it is treated first, with patching of the preferred eye. Sometimes the patch is alternated between the eyes—that is, patching one eye one day and the other the next.

The main treatment for exotropia is surgery. But before recommending surgery, some ophthalmologists may try nonsurgical treatments. These include minus lenses (glasses for myopia) even if the child is not myopic. Minus lenses will force the child's eyes to accommodate (and converge) to see clearly and can help to control exotropia. Exercises are helpful in one type of exotropia (convergence insufficency). Unfortunately, exercises do not work as well for other forms of exotropia, or for other kinds of strabismus.

These nonsurgical treatments may delay surgery, but if one eye is turning out often and easily, surgery is generally indicated. The operation is usually performed when it is apparent to the family and the ophthalmologist that the deviation has progressed to the point that it can no longer be controlled (one eye turns out easily and stays there, not returning with the next blink or change of gaze), or if the child must close one eye to avoid double vision.

Convergence insufficiency One form of exotropia, called convergence insufficiency, deserves special mention. Children with this problem have straight eyes when they look at something far away, but their eyes tend to turn out when they look at something up close—for example, when they're reading. The condition is aptly named; the eyes cannot converge as well as they should. As a result, these children may experience eyestrain when reading. The problem usually begins in the teens or young adulthood, so it's rarely the cause of poor reading in elementary school.

Treatment: Convergence insufficiency is treated with orthoptic exercises that can be done at home. "Pencil push-ups" are a time-honored and effective treatment. The patient holds a pencil at arm's length and focuses on the writing on the pencil. The pencil is then slowly brought closer, inducing accommodation and convergence, and is held at reading distance. Sometimes a light is used instead of a pencil. Hand-held prisms may be added to stimulate more convergence. The exercises are generally continued for a few months. Over time, the symptoms improve, though if they recur, exercises may need to be restarted.

Almost all cases of exotropia can be treated effectively. With consistent follow-up, glasses, patching, exercises, and surgery as needed, the prognosis for good vision and straight eyes is very good.