



## **Esotropia (Crossed Eyes)**

Strabismus is the overall word for an eye imbalance, or the condition when the eyes are not working together properly. The medical word for crossed eyes is esotropia. It is often caused by heredity, however you may now know of immediate family members with this same condition. Esotropia is also more common in children who have a neurological risk (cerebral palsy, Downs Syndrome, prematurity, etc.). Esotropia is categorized in several different ways, and the management for each category varies. The two major categories are infants who are born with esotropia and older children who suddenly develop esotropia.

Infants who manifest the esotropia within the first year of life usually have a very noticeable angle of crossing and require eye muscle surgery. They usually do not need glasses. These same children often develop vertically deviating eyes at a later stage of childhood, even though surgery, glasses, or both correct the crossed eyes themselves. The two ways in which the vertical misalignment of the eyes occurs are when an eye shoots up as it turns toward the nose (an overacting inferior oblique muscle) or when an eye floats up with fatigue or inattentiveness (a dissociated vertical deviation). The vertical misalignment does not occur in all children with esotropia but it occurs most commonly in the group with congenital esotropia.

Many times infants look like their eyes cross, but they are really straight. This is called pseudoesotropia. This condition is really normal and due to the appearance of the infant's flat nasal bridge and inner eyelid folds that cover the white of the eye more on the inside than the outside. Usually we examine these children again after their second birthday when they can read the eye chart.

Older children, most commonly 2-to 3-year-olds, can suddenly acquire esotropia that is corrected by glasses and sometimes surgery. Children who are very far-sighted (hyperopic) must focus excessively both at distance and at near. The neurologic act of focusing draws into play a convergence of the eyeballs. This is why they cross with the effort of focusing. When the glasses replace the child's focusing effort, the associated crossing can be totally or partially eliminated. If the eyes are completely straightened out by using the glasses, then surgery is not required nor is it indicated. If there is residual crossing, surgery may be necessary. Finally, surgery may straighten out the eyes but not eliminate the need for glasses.

continued

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## **Estotropia (Crossed Eyes) - continued**

There are other variations on this theme. Some children are not very far-sighted and glasses will not straighten their crossing. These children require surgery. Other children cross intermittently and simply may be observed especially if the crossing is infrequent, intermittent, and well controlled. The reason why some children are periodically straight and sometimes crossed is that the neuromuscular effort to keep straight eyes becomes weakened with fatigue, illness, anxiety, or physical injury. These children may lose "control" of the ocular alignment and manifest the crossing at this time. Eventually glasses or surgery may be required if the crossing does not resolve.

An uncommon category of crossed eyes is when the eyes are fairly straight when looking into the distance, but the eyes cross noticeably up close. These children not only require glasses, but often need bifocals (the kind of glasses that one ordinarily sees in older adults). This condition often resolves with time although some children eventually need eye muscle surgery if the crossing becomes constant or does not go away during the teen years.

Management of crossed eyes, which is described above, is always secondary in concern to that of appropriate treatment of amblyopia (lazy eye). There is only one chance in life to develop good vision by each eye, while there is some greater latitude for fixing the crossed eyes. Ideally, one prefers to have straight eyes as early in life as possible in order to allow the development of some binocular vision and depth perception.

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