

Strabismus is a vision condition where one's eyes are not able to properly align under normal conditions. In layman's language, it is also called cross eyed, crossed eye, weak eye, wandering eyes. One eye is misaligned in relation to the other when focusing on an object. Both eyes are not able to focus in the same direction, at the same point, at the same time. When a person's eyes appear to be turned in (toward the nose), they are commonly called cross-eyed. This is more formally termed Esotropic Strabismus. When the eyes appear to be turned outward (away from the nose), the person is commonly called wall eyed. This is known as Exotropic Strabismus. When one eye appears to turn upward or downward relative to the other eye, this is called Hypertropic Strabismus. In some cases, the eye may turn in more than one direction.

Strabismus is the result of a lack of coordination between the extraocular muscles of the eye that is responsible for eye movement. Either one or both eyes may turn in, out, up or down when looking at an object. Strabismus prevents proper binocular vision and prevents both eyes from gazing the same point. A patient's perception of depth (ability to recognize the order of object in three dimensions) is distorted.

Infants, children and adults are susceptible to some degree of Strabismus. Adults are more likely to develop Strabismus as a result of injury or disease and experience an exotropic condition. Studies indicate that more than half of the children that develop Strabismus develop the condition during infancy, at or some time shortly after birth. Initially, children will suffer from double vision. Double vision is caused by the misalignment of one eye in relation to the other. To compensate for the misalignment, a child's brain will eventually suppress any image received from the strabismic eye. As a result, the visual cortex of the brain will fail to completely develop and the strabismic eye will never develop to see well. This type of suppression or loss of vision is known as amblyopia (or lazy eye).

Strabismus is rarely cured, but it may be effectively treated. Treatment may be as simple as requiring the patient to wear eyeglasses, to use prism lenses, to take medication or it may be best to leave the condition untreated. However, in most instances, the only effective treatment for Strabismus is surgery. Surgery will attempt to eliminate diplopia (double vision), eliminate abnormal head posturing, improve depth perception and improve the patient's psychosocial functions. Strabismus surgery is considered a corrective surgery that may also provide some cosmetic benefit to the patient.

When eye remains deviated all the time, Strabismus is classified as constant. If, on the other hand, an eye deviates only some of the time, Strabismus is classified as intermittent. Intermittent cases of Strabismus usually result from some other physical condition, such as sickness or stress. Treatment is available for both classifications of Strabismus. There are also various sub-classifications of Strabismus, which determine the type of treatment that may be needed.

Bilateral, Unilateral and Alternating Strabismus

Strabismus may be classified according to the laterality of the eyes. Strabismus may be classified as bilateral, unilateral or alternating. If both are eyes converge or diverge, at the same time, Strabismus is bilateral. If only one eye converges or diverges, Strabismus is said to be unilateral. If convergence or divergence alternates between the eyes, such that one eye is able to focus on an object while the opposite eye is askew, Strabismus is said to be alternating.

Congenital and Acquired Strabismus

Strabismus may be classified according to the time at which the conditions onsets. When strabismus is developed during infancy, it is called congenital. When strabismus develops in adults, it is called acquired. Congenital Strabismus may develop Amblyopia, which is referred to as lazy eye. Amblyopia is a naturally occurring condition in which the brain ignores any input from a deviated eye. Amblyopia in infancy causes problems in the ability to perceive depth. Early treatment of Strabismus or Amblyopia greatly reduces the chance of developing depth perception problems.

Acquired Strabismus in an adult, who otherwise had proper alignment of the eyes before the onset, is likely to cause double vision, which also known as diplopia. This is in contrast to orthotropia, which is characteristic of eyes that are properly aligned. With orthotropia, the brain is able to fuse the two different objects seen by each eye into one three dimensional object. Orthotropia is also characterized by a high degree of depth perception. Acquired Strabismus is typically caused by injury to the eye orbit or injuries to the brain, such as with a stroke or head injury. Loss of vision from Acquired Strabismus usually results in a gradual development of an exotropia condition, rather than Amblyopia.

Esotropic, Exotropic and Hypertropic Strabismus

Strabismus may be classified according to the direction in which the eye turns. Eyes that turn inward characterize Esotropic Strabismus, the most common form of Strabismus. The symptoms of Esotropic Strabismus are usually visible by 6 months and the condition will only worsen with age.

Accommodative Esotropia is a form of Esotropia that develops in farsighted children, almost exclusively after 6 months of age. The condition is termed accommodative since it relies upon the degree of accommodation necessary for a farsighted child to bring an object into focus. The degree of accommodation is proportional to the degree of farsightedness. In some children, an over-convergence of the eyes is necessary to bring an object in focus. This over-convergence is Accommodative Esotropia. Eyeglasses are usually able to correct this condition.

Eyes that turn outward, away from the nose, characterize Exotropic Strabismus. The degree of turn is typically greater in children as they focus on more distant objects since focusing on close objects forces their eyes to converge. Unlike children with other types of Strabismus, bright sunlight tends to make exotropic children squint. While some children may benefit from eyeglasses or prisms, most children require surgery to correct the misalignment.

Hypertropic Strabismus is characterized by a vertical misalignment where an eye turns up or down in relation to the other eye. It is common for medical professionals to regard the condition relative to the upwardly skewed eye. Hypertrophic Strabismus may exist along with other types of Strabismus.

Pseudostrabismus

Pseudostrabismus is a false appearance of Strabismus. Strabismus is usually falsely anticipated when the patient has a flat, wide bridge of the nose and a fold of skin in the corner of the eye that makes the eye appear to be turned inward (esotropic). Pseudostrabismus is typically found in infants and children. As children age, the systems of Pseudostrabismus

disappear since the bridge of the nose tends to narrow and eliminate any folds in the corner of their eyes.

A family history of Strabismus, the loss of circulation that results from diabetes, cataracts, farsightedness, eye tumors and any other disease that is cause for a loss of vision are contributing factors in the development of Strabismus. While a family history of Strabismus is common with many Strabismus patients, other patients have no family history of the condition. Neurological conditions, such as Cerebral Palsy, hydrocephalus premature birth, brain tumors and Down's syndrome, may also contribute to Acquired (adult) Strabismus, but Congenital (child) Strabismus is rarely complemented with such neurological conditions. Acquired Strabismus may also develop as a result of untreated or unsuccessfully treated Congenital Strabismus.

A diagnosis of individuals with the following symptoms is necessary to confirm the existence and extent of Strabismus as well as the required treatment for the condition.

1. The eyes appear to be crossed
2. The eyes do not align in the same direction
3. There is visible indication that the eyes do not move together in coordination.
4. An individual experiences double vision
5. An individual experiences vision in only one eye
6. An individual experiences a loss of depth perception