Anthem

Clinical UM Guideline

Subject: Surgical Strabismus Correction
Guideline #: CG-SURG-41
Status: Reviewed

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Description

This document addresses strabismus, which refers to eyes that are not properly aligned. Examples of strabismus include one or both eyes that are intermittently or constantly turned in towards the nose (esotropia) or out (exotropia). Strabismus surgery involves surgical weakening or strengthening of the ocular muscles to correct the ocular alignment. The goals of strabismus surgery are to restore or reconstruct normal ocular alignment, obtain normal visual acuity in each eye, obtain or improve fusion, eliminate any associated sensory adaptations or diplopia, and to improve visual fields.

Note: The use of botulinum toxin is not addressed in this document.

Clinical Indications

Medically Necessary:

Adults

Surgical strabismus correction for individuals 18 years of age or olderis considered **medically necessary** for **any** of the following:

A. Diplopia; **or**
B. Visual confusion; **or**
C. Restoration of binocular vision; **or**
D. Intolerance of prism glasses or patch; **or**
E. Restoration of visual field in individuals with esotropia; **or**
F. Elimination or improvement of abnormal head posture; **or**
G. Improvement of psychosocial function or vocational status.

Pediatrics

Surgical strabismus correction in individuals less than 18 years of age is considered **medically necessary** for **any** of the following:

A. Infantile esotropia (inward deviation) with onset before 6 months of age; **or**
B. Acquired non-accommodative esotropia; **or**
C. Partially accommodative esotropia; **or**
D. Any deviation due to neural dysfunction, or threatening normal binocular vision; **or**
E. Intermittent exotropia (outward deviation); **or**
F. Constant exotropia; **or**
G. Hyper/hypotropia (vertical deviation); **or**
H. Accommodative esotropia that does **NOT** improve with 3-6 months of refractive correction, patching or when it threatens normal binocular vision.

Not Medically Necessary:

Surgical strabismus correction is considered **not medically necessary** when the criteria listed above are not met and for all other indications.

Coding

The following codes for treatments and procedures applicable to this guideline are included below for informational purposes. Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement policy. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

When services may be Medically Necessary when criteria are met:

CPT	
67311	Strabismus surgery, recession or resection procedure; 1 horizontal muscle
67312	Strabismus surgery, recession or resection procedure; 2 horizontal muscles
67314	Strabismus surgery, recession or resection procedure; 1 vertical muscle (excluding superior oblique)
67316	Strabismus surgery, recession or resection procedure; 2 or more vertical muscles (excluding superior oblique)
67318	Strabismus surgery, any procedure, superior oblique muscle
67320	Transposition procedure (eg, for paretic extraocular muscle), any extraocular muscle
67331	Strabismus surgery on patient with previous eye surgery or injury that did not involve the extraocular muscles
67332	Strabismus surgery on patient with scarring of extraocular muscles (eg, prior ocular injury, strabismus or retinal detachment surgery) or restrictive myopathy (eg, dysthyroid ophthalmopathy)
67334	Strabismus surgery by posterior fixation suture technique, with or without muscle recession
67335	Placement of adjustable suture(s) during strabismus surgery, including postoperative adjustment(s) of suture(s)
67340	Strabismus surgery involving exploration and/or repair of detached extraocular muscle(s)

ICD-10 Procedure

08BL0ZZ	Excision of right extraocular muscle, open approach
08BL3ZZ	Excision of right extraocular muscle, percutaneous approach
08BM0ZZ	Excision of left extraocular muscle, open approach
08BM3ZZ	Excision of left extraocular muscle, percutaneous approach
08QL0ZZ	Repair right extraocular muscle, open approach
08QL3ZZ	Repair right extraocular muscle, percutaneous approach
08QM0ZZ	Repair left extraocular muscle, open approach
08QM3ZZ	Repair left extraocular muscle, percutaneous approach
08SL0ZZ	Reposition right extraocular muscle, open approach
08SL3ZZ	Reposition right extraocular muscle, percutaneous approach
08SM0ZZ	Reposition left extraocular muscle, open approach
08SM3ZZ	Reposition left extraocular muscle, percutaneous approach

ICD-10 Diagnosis

All diagnoses

When services are Not Medically Necessary:
For the procedure codes listed above when criteria are not met or for situations designated in the Clinical Indications section as not medically necessary.

Discussion/General Information

Strabismus refers to the misalignment of the eyes which may result in impaired binocular vision and depth perception, amblyopia, diplopia, visual confusion, or suppression of vision of one eye. The brain may learn to ignore the input from one eye, causing permanent vision loss in that eye (one type of amblyopia) (AAO, 2012). Surgical strabismus correction is performed to restore or reconstruct normal ocular alignment, obtain normal visual acuity in each eye, to obtain or improve fusion, to eliminate any associated sensory adaptations or diplopia, and to improve visual fields.

Adults

In 2012, the American Association for Pediatric Ophthalmology and Strabismus (AAPOS) and the American Academy of Ophthalmology (AAO) updated the *Adult Strabismus Surgery* joint policy statement. The indications for surgical intervention for adults with strabismus to restore and reconstruct normal ocular alignment include:

- Diplopia: The perception of the same image in two different visual directions.
- Visual confusion: The perception of two different images superposed onto the same space.
- Restoration of binocular vision: When eyes are misaligned, there is loss of binocular vision or fusion (unification of images enabling three-dimensional space depth perception).
- Intolerance of prism glasses or patch.
- Restoration of visual field in adults with esotropia (ocular deviation towards the nose).
- Elimination or improvement of abnormal head posture.
- Psychosocial function/vocational status.

Visual and psychological disabilities may result from adult strabismus. The 2012 policy statement on adult strabismus by the AAPOS/AAO noted adult strabismus may be related to a “Medical or neurological condition such as diabetes, thyroid/Graves' disease, myasthenia gravis, brain tumor, head trauma, or stroke.” In addition, an individual with childhood strabismus may develop diplopia as an adult. In the past, many eye doctors thought that misaligned eyes in adults could not be treated successfully. Even today, affected individuals may not be offered appropriate surgical treatment because of the misconception that adult strabismus cannot be treated.

Successful strabismus surgery can “Relieve diplopia and visual confusion, restore or reestablish depth perception, expand the visual field, eliminate an abnormal head posture and improve psychological function” (AAPOS/AAO, 2012). Advances in the management of misaligned eyes may provide benefits to most adults as well as children.

Liebermann and colleagues (2014) reported improvement in health-related quality of life (HRQOL) using the Adult Strabismus 20 (AS-20) questionnaire. This retrospective review focused on nondiplopic adults that had childhood onset strabismus and had corrective surgery with pre- and post-AS-20 results available. Statistically significant improvement ($p<0.05$) in 9 out of 10 function-related questions were noted. The authors noted these results suggest function-related benefits for adults who had surgical strabismus surgery. However, the limitations of the study include the small number of participants (n=20) who met inclusion criteria, and the retrospective approach. The authors noted ongoing study of HRQOL in adults with surgical correction for strabismus is needed to verify their results.

Pediatrics

The development of binocularity is the goal in children, especially the very young. Evidence suggests that early alignment of the eyes in young children may improve the prognosis for binocular vision. The American Optometric Association (AOA, 2012) reported for children with infantile esotropia, “Achieving binocular alignment early in life (before age 2 years) to within 10 prism diopters of orthotropia increases the likelihood of achieving binocularity.” The AAO (2012) notes acquired esotropia occurs more frequently than infantile esotropia, and those with “Early onset acquired esotropia are more likely to require extraocular muscle surgery despite correction of their refractive error with eyeglasses.” Prompt surgical realignment in individuals with decompensated accommodative esotropia appears to improve the quality of stereopsis. Early surgery is indicated for those with constant infantile-onset exotropia to improve sensory outcomes. Likewise, the AAO notes in the preferred practice pattern guideline *Esotropia and Exotropia* (2022) that “There is evidence that early surgical correction improves sensory outcomes for infantile esotropia, probably because the duration of constant esotropia is minimized.”

The AOA notes in the preferred practice pattern guideline *Esotropia and Exotropia* (2012) there are multiple factors involved in the timing and urgency for surgical referral, including but not limited to the type of strabismus; age of the child; and the likelihood of improving fusion. Children with infantile strabismus requiring surgical correction should ideally undergo surgery prior to 2 years of age. Development of binocularity with limited stereopsis have been demonstrated in studies when surgery is performed at an early age and when the duration of ocular misalignment has not been extensive.

There are multiple modalities utilized to address esotropia and exotropia, which may include (AAO, 2012):

- Correction of refractive errors;
- Bifocals;
- Prism therapy;

- Amblyopia treatment;
- Extraocular muscle surgery (strabismus surgery);
- Botulinum toxin A injection;
- Convergence exercises for convergence insufficiency exotropia;
- Stimulating accommodative convergence (overcorrection of myopia or undercorrection of hyperopia);
- Other methods.

Eleven studies satisfied the eligibility criteria of a systematic review of the treatment of childhood intermittent exotropia, X(T). Seven studies compared unilateral to bilateral resection. Four studies compared surgical to non-surgical interventions. While surgical interventions appeared to be more effective than non-surgical interventions in improving the angle of deviation, the authors note that the studies were of limited extent and quality with heterogeneous outcomes assessments and timeframes (Joyce, 2015).

In general, recovery from strabismus surgery is rapid, and serious complications are uncommon. Common postoperative effects include nausea and vomiting which can be treated with antiemetics. Discomfort (scratchy sensation) is usually mild after the procedure. During the first 24 to 48 hours, a small amount of blood-tinged discharge from the operated eye(s) is a normal occurrence. It may take several weeks to months for the redness to disappear. Temporary double vision may occur after surgery, more commonly in adults and children older than 6 years of age. Postoperative infection is an infrequent complication (AAPOS, 2012; National Institutes of Health, 2012).

Definitions

Amblyopia: Vision in one of the eyes is reduced because the eye and the brain are not working together properly. The eye itself looks normal, but it is not being used normally because the brain is favoring the other eye. This condition is also sometimes called lazy eye.

Binocular: Referring to the use of both eyes.

Diplopia: Double vision.

Hypertropia: A classification of strabismus with the eye turning in an upward direction.

Hypotropia: A classification of strabismus with the eye turning in a downward direction.

Orthotropia: The absence of strabismus.

Prism diopter: The customary unit of measurement of the magnitude of deviation of the visual axes in strabismus. One prism diopter is the angle subtended by a deviation of 1 centimeter at a distance of 1 meter.

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Government Agency, Medical Society, and Other Authoritative Publications:

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Websites for Additional Information

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Strabismus

The use of specific product names is illustrative only. It is not intended to be a recommendation of one product over another, and is not intended to represent a complete listing of all products available.

History

Status	Date	Action
Reviewed	11/09/2023	Medical Policy & Technology Assessment Committee (MPTAC) review. Updated Discussion/General Information, References and Websites for Additional Information sections.
Reviewed	11/10/2022	MPTAC review. Updated Discussion/General Information, Definitions, References and Websites sections.
Reviewed	11/11/2021	MPTAC review. References were updated.
Reviewed	11/05/2020	MPTAC review. References were updated. Reformatted Coding section.
Reviewed	11/07/2019	MPTAC review. References were updated.
Reviewed	01/24/2019	MPTAC review. References were updated.
Reviewed	02/27/2018	MPTAC review. The document header wording was updated from “Current Effective Date” to “Publish Date.” Updated References section.
Reviewed	02/02/2017	MPTAC review. Updated formatting in Clinical Indications section. Updated References and Websites sections.
Reviewed	02/04/2016	MPTAC review. Updated Discussion, References and Websites sections.
Revised	02/05/2015	MPTAC review. Clarified Clinical Indications. Updated Description, Discussion and References sections.
New	02/13/2014	MPTAC review. Initial document development.