



CIGNA MEDICAL COVERAGE POLICY

The following Coverage Policy applies to all plans administered by CIGNA Companies including plans administered by Great-West Healthcare, which is now a part of CIGNA.

**Subject Strabismus Correction,
Surgical**

Effective Date 4/15/2009
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Coverage Policy Number 0317

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Hyperlink to Related Coverage Policies

Botulinum Toxin Type A (Botox® A)
Vision Therapy/Orthoptics

INSTRUCTIONS FOR USE

Coverage Policies are intended to provide guidance in interpreting certain **standard** CIGNA HealthCare benefit plans as well as benefit plans formerly administered by Great-West Healthcare. Please note, the terms of a participant's particular benefit plan document [Group Service Agreement (GSA), Evidence of Coverage, Certificate of Coverage, Summary Plan Description (SPD) or similar plan document] may differ significantly from the standard benefit plans upon which these Coverage Policies are based. For example, a participant's benefit plan document may contain a specific exclusion related to a topic addressed in a Coverage Policy. In the event of a conflict, a participant's benefit plan document **always supercedes** the information in the Coverage Policies. In the absence of a controlling federal or state coverage mandate, benefits are ultimately determined by the terms of the applicable benefit plan document. Coverage determinations in each specific instance require consideration of 1) the terms of the applicable group benefit plan document in effect on the date of service; 2) any applicable laws/regulations; 3) any relevant collateral source materials including Coverage Policies and; 4) the specific facts of the particular situation. Coverage Policies relate exclusively to the administration of health benefit plans. Coverage Policies are not recommendations for treatment and should never be used as treatment guidelines. Proprietary information of CIGNA. Copyright ©2009 CIGNA

Coverage Policy

Coverage for strabismus repair is dependent upon benefit plan language, may be subject to the provisions of a cosmetic and/or reconstructive benefit and may be subject to state mandates. Under many benefit plans, strabismus correction is not covered when performed solely for the purpose of improving or altering appearance or self-esteem, or to treat psychological symptomatology or psychosocial complaints related to one's appearance. Please refer to the applicable benefit plan document to determine benefit availability and the terms, conditions and limitations of coverage.

If coverage is available for strabismus correction, the following conditions of coverage apply.

CIGNA covers the surgical correction of strabismus in children up to age five as medically necessary when there is vision in both eyes and surgery is expected to achieve binocularity.

CIGNA covers the surgical correction of strabismus in adults and children age five and older as medically necessary when ALL of the following criteria are met:

- There is documented diplopia secondary to impaired extraocular muscle coordination.
- There is failure, contraindication, or intolerance of available nonsurgical management, including optical manipulations with a prism or other corrective lens, occlusion therapy, medications, and Botulinum Toxin Type A.
- The surgery proposed is expected to restore the ability to maintain binocular fusion.

General Background

Strabismus refers to ocular misalignment as a result of impaired extraocular muscle coordination. It is one of the most common eye disorders in children, affecting approximately 3% of the general population. Risk factors for strabismus include prematurity, family history, cerebral palsy, many chromosomal and other major genetic abnormalities, and major head trauma. Strabismic disorders are characterized by the inward, outward or vertical deviation of one or both eyes. This deviation causes the two eyes to be directed to different points when viewing the same object, making it difficult to maintain binocularity. Binocular vision allows for the perceptions of depth and dimension. Normal binocular vision depends on sensory fusion or integration of information from both eyes, as well as motor alignment and eye coordination. Strabismus may result in impaired depth perception, amblyopia, diplopia, suppression of vision of one eye, or an undesirable appearance. The two most common strabismic conditions are esotropia (eye turns inward) and exotropia (eye turns outward).

The classification of strabismus may be based on a number of factors in addition to the relative position of the eyes. These factors include age of onset, degree of associated refractive error, and whether the deviation is concomitant (constant), or incomitant (intermittent). Infantile strabismus, also referred to as congenital esotropia, usually occurs before six months of age. Acquired strabismus may occur at any time after infancy but is frequently associated with adult onset of the disorder. Adult strabismus includes all types of congenital and acquired strabismus that have persisted in individuals beyond the age of nine, which is considered the age of visual maturity. The type of strabismus is established by a detailed history and ophthalmoscopic examination.

Adults may have strabismus beginning in childhood or may have acquired the disorder due to cranial nerve palsies, trauma or neurological conditions. Unlike children with strabismus, adults may have had normal binocularity prior to the onset of strabismus and, as a result, may have diplopia and visual confusion. The initial symptoms of strabismus in adults may include: abnormal head posture, headache, eye fatigue or pain. In adults with untreated congenital strabismus, it may be too late to treat the associated amblyopia and depth perception impairment; therefore, the goal of treatment is sometimes purely cosmetic.

The treatment goals for acquired and congenital strabismus are usually to restore the ability to maintain single binocular vision and fusion of images and to improve impaired depth perception. Interventions for the treatment of strabismus include: surgery, botulinum toxin A injection, occlusion therapy, miotic and mydriotic medications, and optical manipulations with a prism or other corrective glasses. Surgical procedures involve lengthening or shortening the extraocular muscles to realign the affected eye. Surgical intervention is indicated for most cases of esotropia and exotropia in children but should be performed only when more conservative methods are ineffective.

Literature Review

Simonsz and colleagues (2005) compared the outcomes of early versus late surgery for infantile strabismus in a prospective, controlled, nonrandomized multicenter trial. A total of 200 children had surgery early (i.e., age 6–24 months), and 232 children were scheduled for late surgery (i.e., age 32–60 months). Primary outcome measures included level of binocular vision, angle of strabismus at distance, and visual acuity. Final follow-up examinations were performed at an average age of 6.8 years in the both groups. Binocular vision at final examination was significantly better in the early group than in the late group ($p=0.001$). The angle of strabismus was not found to be different between the two treatment groups ($p=0.967$). The ratio of visual acuities (i.e., worse eye relative to better eye) was larger in the early group than in the late group ($p=0.023$). Based on the larger proportion of children in the early group who had an increased level of binocular vision, it was concluded that early surgery for large-angle esotropia seems warranted.

In an American Academy of Ophthalmology (AAO) technology assessment, Mills et al. (2004) evaluated the clinical benefit of surgery for strabismus in adults. Much of the evidence exists in the form of nonrandomized case series. Successful surgical alignment rates of 68–85% have been reported. One randomized clinical trial of adults with strabismus compared surgical correction with botulinum toxin A injection. Results indicated that surgery was superior to treatment with botulinum toxin A in realigning the eyes ($p=0.027$). Clinical benefits of realignment include: elimination of preoperative diplopia, reestablishment of binocular fusion, expansion of visual field, improvement of head posture, and improvement of psychosocial self-assessment. It was concluded that, despite the paucity of randomized controlled studies, the literature suggests that surgical treatment of

strabismus is safe and effective in improving ocular alignment. Risks of strabismus surgery include postoperatively acquired diplopia, loss of binocular fusion and the need for unplanned, repeat operations (Mills, et al., 2004). The goal of strabismus correction in adults should be to achieve binocular vision and fusion.

Beauchamp et al. (2003) conducted a multicenter retrospective study to evaluate the success of strabismus surgery in adult patients (n=299). Onset of strabismus had occurred in 90 of these patients before visual maturity (BVM) and in 140 patients after visual maturity (AVM). The original onset of strabismus was unknown for the remaining 64 patients. Diplopia was the most common presenting complaint, reported by 60% of all patients. Other complaints included: headaches, restricted visual field, decreased depth perception and difficulties with reading and driving. Surgical procedures varied by centers. Median follow-up was three months. Results indicated that overall diplopia resolved in 56% of patients who complained of double vision preoperatively. The rate of resolution for other complaints was similar between both groups. The overall rate of alignment success was reported to be 72%. The alignment success rate was higher in the AVM group (81%) than in the BVM group (63%) (p=0.004). The authors noted that, based on the surgical success rates, surgical treatment in adults should not be considered “merely cosmetic.” Limitations of the study include the retrospective method of data collection, missing data on a subset of patients and short follow-up period (Beauchamp, et al., 2003).

Professional Societies/Organizations

The AAO guideline for the management of esotropia and exotropia states the following (AAO, 2007):

- All forms of esotropia and exotropia should be considered for treatment.
- Ocular alignment should be established as soon as possible in young children, to maximize binocularity, prevent or facilitate treatment of amblyopia, and normalize appearance.
- Correction of significant refractive error is the first treatment modality.
- In almost all cases, clinically important refractive errors should be corrected.
- Amblyopia treatment is usually started before surgery, because this may reduce the angle of strabismus or increase the likelihood of good postoperative binocularity.

The guideline further states that “children or adults with esotropia should undergo surgical correction if eyeglasses and amblyopia management are ineffective in straightening the eyes. Strabismus surgery should be performed only when more conservative methods have failed or are unlikely to be of benefit. Surgery is rarely justified when the primary objective is to eliminate the eyeglasses” (AAO, 2007).

According to a joint policy statement from the American Association for Pediatric Ophthalmology and Strabismus (AAPOS) and the AAO on adult strabismus surgery, this intervention seeks to restore normal ocular alignment and is not surgical enhancement for cosmetics. Indications for adult strabismus surgery include diplopia and loss of binocular and peripheral vision (AAPOS/AAO, 2007).

The U.S. Preventive Services Task Force (USPSTF) specifically recommends screening to detect amblyopia, strabismus and defects in visual acuity in children younger than five years of age. The American Academy of Pediatrics (AAP) recommends that all children have an assessment for eye problems in the newborn period and then at all subsequent routine health visits. Infants and children at high risk for eye problems should be referred to a pediatric ophthalmologist for specialized examination. Timely diagnosis and appropriate treatment of children with strabismus is likely to reduce the prevalence of persistent amblyopia and ocular misalignment in adults (Royal College of Ophthalmologists, 2000).

Summary

Treatment of strabismus may include the occlusion of one eye, medications, corrective glasses or strabismus surgery to realign the eyes. Strabismic amblyopia should be treated prior to strabismus surgery, as surgical results are improved if symmetry of visual acuity is maximized. It is generally agreed upon that the many children with strabismus will eventually require surgical correction. The primary goals of strabismus surgery are to maximize visual acuity and to optimize conditions for binocular vision. The restoration of binocular fusion and elimination of diplopia are accepted indications for strabismus correction in adults.

Coding/Billing Information

Note: This list of codes may not be all-inclusive.

Covered when medically necessary:

CPT®* Codes	Description
67311	Strabismus surgery, recession or resection procedure; one horizontal muscle
67312	Strabismus surgery, recession or resection procedure; two horizontal muscles
67314	Strabismus surgery, one vertical muscle (excluding superior oblique)
67316	Strabismus surgery, two or more vertical muscles (excluding superior oblique)
67318	Strabismus surgery, any procedure, superior oblique muscle
67320	Transposition procedure (e.g., 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-9-CM Diagnosis Codes	Description
368.00 – 368.03	Amblyopia ex anopsia
368.2	Diplopia
368.30 – 368.34	Other disorders of binocular vision
378.00 – 378.08	Esotropia
378.10 – 378.18	Exotropia
378.20 – 378.24	Intermittent heterotropia
378.30 – 378.34	Other and unspecified heterotropia
378.40 – 378.45	Heterophoria
378.50 – 378.54	Paralytic strabismus
378.60 – 378.62	Mechanical strabismus
378.71 – 378.73	Other specified strabismus
378.81 – 378.87	Other disorders of binocular eye movements
378.9	Unspecified disorders of eye movements

***Current Procedural Terminology (CPT®) © 2008 American Medical Association: Chicago, IL.**

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Policy History

<u>Pre-Merger Organizations</u>	<u>Last Review Date</u>	<u>Policy Number</u>	<u>Title</u>
CIGNA HealthCare	4/15/2007	0317	Strabismus Correction, Surgical

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