Description of Procedure or Service

Vision therapy encompasses a wide range of optometric treatment approaches, with the therapeutic goal of correcting or improving specific dysfunctions of the vision system. Although there is no clear consensus on the exact definition of vision therapy, with different vision training approaches in use, the American Optometric Association (AOA) (2013) broadly defines it as an individualized treatment regimen that involves the systematic use of lenses, prisms, filters, occlusion, and other appropriate materials, methods, equipment, and procedures, including eye exercises and behavioral modalities that are used for eye movement and fixation training. Dysfunctions of the visual system that purportedly are treatable by vision therapy include amblyopia, strabismus, vergence or nonstrabismic binocular vision disorders, and accommodative deficiencies.

Definitions

Amblyopia: Amblyopia is the medical term used when the 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.

Amblyopia is characterized by one or more of the following diagnostic findings:

1. Reduced acuity in affected eye which does not normalize with refractive prescription
2. Anisometropia
3. Strabismus
4. Bilateral significant refractive errors
5. Inability to maintain stable foveal fixation
6. Suppression of binocular vision
7. Reduced stereopsis
8. Reduced accommodative facility
9. Inefficient ocular motor skills

Standard treatment recommendations include occlusion therapy (Li, T. & Shotton, K. 2009), (PEDIG, 2002), (Repka et. al., 2014 & 2017), (Rouse, 1994), (Rutstein, et al., 2010), (Taylor & Elliott, 2014), (Wallace et al., 2013). Full time treatment showed maximum benefit with 6 hours of therapy per day (Yazdani, N. et. al., 2017).

A study done by Yalcin and Balci (2014) using perceptual vision therapy, showed minimal improvement in adult hypermetropic anisometropic amblyopia.
**Convergence Insufficiency:** Convergence insufficiency (CI) is a common binocular vision disorder that is often associated with a variety of symptoms, including eyestrain, headaches, blurred vision, diplopia (double vision), sleepiness, difficulty concentrating, movement of print while reading, and loss of comprehension after short periods of reading or performing close activities.

These signs and symptoms associated with convergence insufficiency are often related to prolonged, visually-demanding, near centered tasks such as reading:

1. Diplopia (double vision)
2. Asthenopia (eye strain)
3. Transient blurred vision
4. Difficulty sustaining attention to near point tasks
5. Abnormal fatigue
6. Headache
7. Pain in and around the eye
8. Abnormal postural adaptation/abnormal working distance

A small percentage of cases are successfully managed by prescription of therapeutic prisms and/or lenses. However, most patients with convergence insufficiency require orthoptic vision therapy (Convergence, 2008 & 2009). The goals of vision therapy include normalizing near-point of convergence, fusional vergence ranges as well as depth judgement. The duration of treatment depends on the severity and complexity of the condition (Scheiman et al. 2011).

Convergence excess is often successfully managed by prescription of therapeutic lenses and/or prisms (Gallaway & Scheiman, 1997).

**Strabismus:** Misalignment of the eyes. A condition in which the visual axes of the eyes are not parallel and the eyes appear to be looking in different directions. There are two distinct types:

- **Estropia:** In strabismus, one eye is either constantly or intermittently not directed toward the same point as the other eye when the patient attempts to fixate an object. As a result, an image of the fixated object is not formed on the fovea of the strabismic eye. The convergent (inward) misalignment of one eye is defined as estropia.

- **Exotropia:** In strabismus, one eye is either constantly or intermittently not directed toward the same point as the other eye when the patient attempts to fixate an object. As a result, an image of the fixated object is not formed on the fovea of the strabismic eye. A divergent (outward) misalignment is referred to as exotropia.

Most cases of strabismus can be successfully managed by prescription of therapeutic lenses or prisms (Buck et al., 2012), (Christiansen, et al., 2017), (Gnanaraj & Richardson, 2005), (Hatt & Gnanaraj, 2013), (Joyce et al., 2015) (Mohney et al., 2007), (PAS, 1990), (Quigley et al., 2017), (Rutstein et al., 2010).
Background

Normal and efficient binocular vision is dependent on the presence of motor alignment and coordination of the two eyes. Binocular vision may be thought of as a continuum, with constant strabismus, or a total lack of binocular vision on one end, and comfortable and continuous single binocular vision, with both eyes focusing on only one object, at the other end. Comfortable and continuous single binocular vision is thought to be dependent on the interrelationship between convergence and accommodation. Convergence, or eye aiming, which is brought about by the coordinated action of the extrinsic eye muscles, refers to the medial movement of the two eyes so that they both are directed toward the object as it is brought closer into view. Vergence disorders, also referred to as nonstrabismic binocular dysfunctions, include convergence insufficiency, convergence excess, divergence insufficiency, and divergence excess. Accommodation is the increase in thickness and convexity, i.e., curvature, of the lens, accomplished with the aid of the ciliary muscles and suspensory ligament, in order to focus on a close object. Disorders of accommodation that have been treated by optometric intervention include accommodative spasm, accommodative infacility, accommodative insufficiency, and ill-sustained accommodation. Accommodative dysfunction and vergence disorders may occur together in the same patient.

The goals for treatment of vergence and/or accommodative dysfunction are to assist the patient in efficient functioning at school, at work, and/or in athletic activities and to eliminate ocular, physical, and psychological symptoms associated with these disorders. Orthoptic visual therapy is designed to increase the efficiency of the accommodative system to facilitate a more effective interaction between this system and the vergence system and/or to maximize the functioning of the fusional vergence system, i.e., divergence and convergence (Barnhardt, C. et al. 2012).

Most vision therapy treatments include in office treatments followed by home treatments. Each office vision therapy session usually consists of 3 parts: 1. the patient's activities over the previous week are assessed; 2. the patient carries out office vision therapy emphasizing techniques and procedures that cannot be done at home; and 3. changes in home vision therapy are discussed, and any new techniques are taught to the patient. Office vision therapy can typically be prescribed on a 1 session per week basis, or 2 to 3 times per week if the patient is especially difficult or home training cannot be performed. (Cacho et al. 2009), (Cooper et al., 2013), (Momeni-Moghaddam et. al., 2015), (Rawstron et al., 2005). Compliance to home therapies ensures a higher rate of success. Balanced binocular viewing therapy (BBV) involves daily viewing of dichoptic movies (with “visibility” matched across the two eyes) and gameplay (to monitor compliance and suppression) (ICSI, 2003), (Pieh & Lagreze, 2008). BBV is a binocular treatment for amblyopia that can be self-administered at home (with remote monitoring), producing rapid and substantial benefits that cannot be solely mediated by a reduction in intraocular suppression (Bossi et al., 2017).

In the 2017 Glenn A. Fry Award Lecture: Establishing an Evidence-based Literature for Vision Therapy-A 25 year journey, Mitchell Scheiman (2018) states: after 12 weeks of treatment, the office-based vergence/accommodative therapy group’s Convergence Insufficiency Symptom Survey score was statistically significantly lower than the scores for the home-based pencil push-up therapy group, the home-based computer vergence/accommodative therapy and pencil push-ups group, and office-based placebo therapy group. The office-based vergence/accommodative therapy group also demonstrated a
significantly improved near point of convergence and positive fusional vergence ranges compared with the other groups. We concluded that office-based vision therapy should be the first-line treatment for symptomatic convergence insufficiency in children 9 to 17 years old. A 1-year follow-up of subjects who were successful at 12 weeks showed that most children aged 9 to 17 years, who were asymptomatic after a 12-week treatment program of office-based vergence/accommodative therapy for convergence insufficiency, maintained their improvements in symptoms and signs for at least 1 year after discontinuing treatment (Shin et al., 2011).

While not uncommon, convergence insufficiency (CI) isn’t well defined and is associated with many near-vision symptoms, making it a challenge to diagnose. In an effort to assess the uniformity of diagnostic criteria, researchers found that practitioners were using a range of criteria to diagnose CI, making it more important than ever to establish an evidence-based definition of the disease for more accurate and consistent diagnoses (Review of Optometry, 2019).

The American Academy of Ophthalmology (2013) suggests specific guidelines for diagnosing and treating convergence insufficiency: An anomaly of the binocular vision system, characterized by a tendency for the eyes to under-converge at near.

A. Diagnostic Factors

Convergence insufficiency is characterized by one or more of the following diagnostic findings:

1. High exophoria at near
2. More Exophoria at near than far
3. Low Accommodative-Convergence/Accommodation ratio
4. Reduced near-point of convergence
5. Low fusional vergence ranges and/or facility
6. Exo-fixation disparity with steep forced vergence slope

B. Management

The doctor of optometry determines the therapeutic modalities, and frequency of evaluation and follow-up, based upon the patient’s condition and unique needs. The management of the case and duration of treatment would be affected by:

1. The severity of symptoms and diagnostic factors including onset and duration of the problem
2. Implications of patient’s general health and associated visual conditions
3. Extent of visual demands placed upon the individual
4. Patient compliance
5. Prior interventions

C. Treatment
A small percentage of cases are successfully managed by prescription of therapeutic prisms and/or lenses. However, most patients with convergence insufficiency require optometric vision therapy. Optometric vision therapy usually incorporates the prescription of specific treatments in order to:

1. Normalize the near-point of convergence
2. Normalize fusional vergence ranges and facility
3. Minimize suppression
4. Normalize associated deficiencies in ocular motor control and accommodation
5. Normalize accommodative/convergence relationship
6. Normalize depth judgment and/or stereopsis
7. Integrate binocular function with information processing

D. Duration of Treatment

The required duration of treatment is commensurate with the severity and/or complexity of the problem.

1. Convergence insufficiency usually requires a minimum of 12 hours of office therapy.

2. Convergence insufficiency complicated by:
   a. restricted fusional ranges: up to an additional 12 hours of office therapy.
   b. suppression: up to an additional 6 hours of office therapy.
   c. an accommodative element: up to an additional 8 hours of office therapy.
   d. other diagnosed vision anomalies such as ocular motor dysfunction and accommodative disorder: may require additional therapy.
   e. associated conditions such as stroke, head trauma, or other systemic diseases: may require substantially more office therapy.

Brain injuries are one of the most common causes of visual difficulties in children. These injuries can results from blunt force trauma, hypoxic ischemia and infection or inflammation.

Neurovisual therapy (including visual restoration or visual perception therapy) is a nonsurgical individualized treatment designed to correct visual-motor or visual-cognitive deficits often associated with brain injury (Mueller et al., 2007). The multi-session therapy is intended to assist in developing new neurological pathways related to the eyes and visual perceptions (Glisson, 2006), (Romano et al., 2008), (Rucker, 2018). In addition to providing rehabilitation following brain injuries the therapy is purported to help with learning disabilities, reading (fluency, comprehension and speed), attention deficit disorders, hand-eye coordination, and balance (Thiagarajan, P. et al. 2013-2014).

Vision is not just visual acuity or “sight;” it also entails how the person recognizes and understands the world around him. It comprises collection, processing, and coding of information. The process of seeing involves conversion of the analog signal of the visual image on the retina to digital signals that are then...
transmitted to the brain to accord the experience of vision. The brain is thus the seeing organ of the body because vision in its broadest sense is accorded by multiple brain components (Dundon, WA. et al., 2015).

A Hayes review of neurovisual therapy (2018) concluded that there is insufficient published evidence to assess the safety and/or impact on health outcomes or patient management regarding the use of neurovisual rehabilitation following brain injuries in children.

Barrett, B. (2009) researched behavioral vision therapy with can be used for Attention Deficit Hyperactivity Disorder, Dyslexia, learning disabilities, etc. The results lacked scientific rigor and uniformity resulting in inconsistent findings and lack of medical organization support.

Although vision therapy is not a first line treatment for learning disabilities and reading difficulties Dusek, WA et. al (2011) and Borsting, E. et al. (2012) discovered that vision therapy treatment for convergence insufficiency often resulted in an improvement in academic behavior. These studies followed up the initial clinical practice guidelines established in 2000 by the American Optometric Association.

Hawelka and Wimmer (2008) performed a study to evaluate dyslexic readers and the possible effects of vision therapy. The outcome revealed that target detection is not impaired in dyslexic readers. Further studies have shown mild academic improvement in dyslexic readers with accommodative insufficiencies (Palomo-Alvarez & Puell, 2008), (Ramsay et al., 2014), (Stein et al., 2000).

**Regulatory Status**

Vision therapy is a procedure and, as such, is not subject to FDA regulation. Devices used in vision training programs may be FDA regulated while others may not require regulation.

**Benefit Application**

This medical policy relates only to the services or supplies described herein. Please refer to the Member's Benefit Booklet for availability of benefits.

Refractory lenses are not included within this coverage policy.

**Policy Statement**

GEHA will provide coverage for vision therapy when it is determined to be medically necessary because the medical criteria and guidelines as documented below have been demonstrated.

**When treatment for Vision Therapy is covered**

Vision Therapy is considered medically necessary when all of the following criteria are met:

A. Patient is diagnosed with symptomatic convergence insufficiency; and
B. Patient is between the ages of 5 years to 18 years of age; and
C. In office visits are conducted by an appropriately licensed professional (such as Optometrist, Ophthalmologist or Occupational Therapist); and
D. Outpatient Vision Therapy Plan including transition to patient/caregiver led home based therapy.

When treatment for Vision Therapy is not covered

A. Vision therapy or orthoptic eye exercises is considered investigational for the following conditions:
   1. Slow reading
   2. Visual disorders other than convergence insufficiency such as (but not limited to):
      a. Exotropia/Esotropia/Strabismus without convergence insufficiency
      b. Myopia
      c. Nystagmus
      d. Presbyopia
      e. Convergence excess
      f. Divergence insufficiency/excess
   3. Learning disabilities such as (but not limited to):
      a. Dyslexia
      b. Attention Deficit Hyperactivity Disorder (ADHD)
   4. Visual perceptual training
   5. Visual restoration therapy
   6. Neuro-visual (optometric) rehabilitation

Policy Guidelines

The American Academy of Pediatrics, American Academy of Ophthalmology, American Association for Pediatric Ophthalmology and Strabismus, and the American Association of Certified Orthoptists issued a joint policy statement on pediatric learning disabilities, dyslexia, and vision (2013). For vision therapy, the policy concluded:

There is inadequate scientific evidence to support the view that subtle eye or visual problems cause or increase the severity of learning disabilities.... Scientific evidence does not support the claims that visual training, muscle exercises, ocular pursuit-and-tracking exercises, behavioral/perceptual vision therapy,
‘training’ glasses, prisms, and colored lenses and filters are effective direct or indirect treatments for learning disabilities.

There is no national coverage determination (NCD). In the absence of an NCD, coverage decisions are left to the discretion of local Medicare carriers.

**Physician documentation**

A. History and Physical supporting the diagnosis of convergence insufficiency:

1. Symptoms should include but are not limited to:
   a. Diplopia (double vision)
   b. Asthenopia (eye strain)
   c. Transient blurred vision
   d. Difficulty sustaining attention to near point tasks
   e. Abnormal fatigue
   f. Headache
   g. Pain in and around the eye
   h. Abnormal postural adaptation/abnormal working distance
   i. Dizziness

2. Diagnostic factors include one or more of the following:
   a. High exophoria at near
   b. More Exophoria at near than far
   c. Low Accommodative-Convergence/Accommodation ratio
   d. Reduced near-point of convergence
   e. Low fusional vergence ranges and/or facility
   f. Exo-fixation disparity with steep forced vergence slope

The following codes are for reference purposes only and do not imply that the service is covered or non-covered. Applicable codes may include but are not limited to:

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<thead>
<tr>
<th>Code</th>
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<tr>
<td>92065</td>
<td>Orthoptic and/or pleoptic training, with continuing medical direction and evaluation.</td>
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**Scientific References**


American Association of Pediatric Ophthalmology and Strabismus. Website. Eye terms and conditions. Available at: https://aapos.org/terms.


Hatt SR, Gnanaraj L. Interventions for intermittent exotropia. Cochrane Database Syst Rev. 2013 May 31;5:CD003737.


Policy implementation and updates

October 2019: origination date