Orthoptic Training for the Treatment of Vision or Learning Disabilities

Policy Number: 9.03.03  Last Review: 3/2017
Origination: 12/2011  Next Review: 3/2018

Policy
Blue Cross and Blue Shield of Kansas City (Blue KC) will provide coverage for orthoptic training when it is determined to be medically necessary because the criteria shown below are met.

Note: Orthoptic training may be excluded in some contracts. Verify benefits prior to review of Medical Necessity.

When Policy Topic is covered
Office-based vergence/accommodative therapy may be considered medically necessary for patients with symptomatic convergence insufficiency if, following a minimum of 12-weeks of home-based therapy (e.g., push-up exercises using an accommodative target; push-up exercises with additional base-out prisms; jump to near convergence exercises; stereogram convergence exercises; recession from a target; and maintaining convergence for 30-40 seconds), symptoms have failed to improve.

When Policy Topic is not covered
Orthoptic eye exercises are considered not medically necessary for the treatment of learning disabilities.

Orthoptic eye exercises are investigational for all other conditions, including but not limited to the following:
- Slow reading
- Visual disorders other than convergence insufficiency

Considerations
This policy addresses office-based orthoptic training. This policy does not address standard vision therapy with lenses, prisms, filters or occlusion (i.e., for treatment of amblyopia or acquired esotropia prior to surgical intervention).

Up to 12 sessions of office-based vergence/accommodative therapy, typically performed once per week, has been shown to improve symptomatic convergence.
insufficiency (CI) in children aged 9 to 17 years. If patients remain symptomatic after 12 sessions of orthoptic training, alternative interventions should be considered.

A diagnosis of convergence insufficiency is based on asthenopic symptoms (sensations of visual or ocular discomfort) at near point combined with difficulty sustaining convergence.

Convergence insufficiency and stereoacuity is documented by:
- Exodeviation at near at least 4 prism diopters greater than at far; **AND**
- Insufficient positive fusional vergence at near (PFV < 15 prism diopters blur or break) on PFV testing using a prism bar; **AND**
- Near point of convergence (NPC) break of > 6 cm; **AND**
- Appreciation by the patient of at least 500 seconds of arc on stereoacuity testing.

Description of Procedure or Service

<table>
<thead>
<tr>
<th>Populations</th>
<th>Interventions</th>
<th>Comparators</th>
<th>Outcomes</th>
</tr>
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<tr>
<td>Individuals:</td>
<td>Interventions of interest are:</td>
<td>Comparators of interest are:</td>
<td>Relevant outcomes include:</td>
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<tr>
<td>With convergence insufficiency</td>
<td>Office-based orthoptic training</td>
<td>Home-based vision exercises</td>
<td>Symptoms</td>
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<td>Functional outcomes</td>
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<tr>
<td>Individuals:</td>
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<tr>
<td>With learning disabilities</td>
<td>Office-based orthoptic training</td>
<td>Standard therapy without orthoptic training</td>
<td>Functional outcomes</td>
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</table>

Orthoptic training refers to techniques designed to correct accommodative and convergence dysfunction/convergence insufficiency. Regimens may include push-up exercises using an accommodative target of letters, numbers, or pictures; push-up exercises with additional base-out prisms; jump-to-near convergence exercises; stereogram convergence exercises; and/or recession from a target. Orthoptic training is used in the treatment of convergence insufficiency and has been investigated for the treatment of attention deficient disorders, dyslexia, and dysphasia.

The evidence for use of office-based orthoptic training in individuals who have convergence insufficiency includes a TEC Assessment, several randomized controlled trials (RCTs), and nonrandomized comparative studies. Relevant outcomes are symptoms and functional outcomes. The most direct evidence on office-based orthoptic training comes from a 2008 RCT that demonstrated office-based vision/orthoptic training improves symptoms of convergence insufficiency in a greater percentage of patients than a home-based vision exercise program consisting of pencil push-ups or home computer vision exercises. Subanalyses of this RCT demonstrated improvements in accommodative vision, parental perception of academic behavior, and specific convergence insufficiency-related symptoms. However, in this trial as in others, the home-based regimen did not
include the full range of home-based therapies, which may have biased results in favor of the orthoptic training. The evidence is insufficient to determine the effects of the technology on health outcomes.

The evidence for office-based orthoptic training in individuals who have learning disabilities includes a TEC Assessment and nonrandomized comparative and noncomparative studies. Relevant outcomes are functional outcomes. A 1996 TEC Assessment did not find evidence that orthoptic training improved outcomes for individuals with learning disabilities. Since that publication, peer-reviewed studies have not directly demonstrated an improvement in reading or learning outcomes with orthoptic training. At least 2 earlier studies that addressed other types of vision therapies were mixed in reporting improvements in reading. The evidence is insufficient to determine the effects of the technology on health outcomes.

Clinical input from academic medical centers and physician specialty societies have supported the use of office-based orthoptic training when home-based therapy has failed. Therefore, orthoptic training may be considered medically necessary in patients with convergence insufficiency whose symptoms have failed to improve with a home-based treatment trial of at least 12 weeks. Home-based therapy should include push-up exercises using an accommodative target, push-up exercises with additional base-out prisms, jump-to-near convergence exercises, stereogram convergence exercises, recession from a target, and maintaining convergence for 30 to 40 seconds.

Background
Convergence insufficiency (CI) is a binocular vision disorder in the ability for the eyes to turn inward towards each other (e.g., when looking at near objects). Symptoms of this common condition may include eyestrain, headaches, blurred vision, diplopia, sleepiness, difficulty concentrating, movement of print, and loss of comprehension after short periods of reading or performing close activities. Prism reading glasses, home therapy with pencil push-ups, and office-based vision therapy and orthoptics have been evaluated for the treatment of convergence insufficiency.

Some learning disabilities, particularly those in which reading is impaired, have been associated with deficits in eye movements and/or visual tracking. For example, many dyslexic persons may have unstable binocular vision and report that letters may appear to move around, causing visual confusion.

Orthoptic training refers to techniques designed to correct accommodative and convergence dysfunction/convergence insufficiency, which may include push-up exercises using an accommodative target of letters, numbers, or pictures; push-up exercises with additional base-out prisms; jump-to-near convergence exercises; stereogram convergence exercises; and recession from a target.(1) A related but distinct training technique is behavioral or perceptual vision therapy, in which eye movement and eye-hand coordination training techniques are used to improve learning efficiency by improving visual processing skills.
In addition to its use in the treatment of accommodative and convergence dysfunction, orthoptic training is being investigated for the treatment of attention deficient disorders, dyslexia, dysphasia, and reading disorders.

**Rationale**

This policy was created in 1996 based on a 1996 TEC Assessment,(2) which offered the following observations and conclusions.

If visual problems have a causal relationship to reading disorders, then it would follow that successful treatment of such visual anomalies might result in an improvement in reading. However, if visual anomalies are the result of a central processing deficit, orthoptic training would not be effective and might possibly be harmful. For example, atypical eye movements might be a compensatory response among persons with reading disorders to obtain sensory information in a manner that they can process. Finally, if eye movement anomalies are uncorrelated to reading disorders, then the presence of a reading disorder would not be an indication for orthoptic intervention.

Three scientific issues must be addressed in the evaluation of orthoptic training: (1) whether available evidence supports the proposition that visual defects have a role in the development or maintenance of reading disorders; (2) whether orthoptics alters the identified visual defects; and most importantly, (3) whether treating the visual defects results in improved reading comprehension. The TEC Assessment concluded that the evidence available at that time did not support the conclusion that orthoptic training improves reading comprehension.(3-6) Specifically, the study populations in the available published reports were not well-defined, and while the subjects were reported to be “poor readers,” it could not be determined whether they had a verifiable diagnosis of a reading disorder. In addition, objective outcomes of reading comprehension were lacking in the published studies.

Since the 1996 TEC Assessment, updated literature searches using the MEDLINE database have been performed on a periodic basis, the most recent through December 3, 2014. The following is a summary of key literature to date.

**Orthoptic Training for Convergence Insufficiency**

**Systematic Reviews**

At least 2 systematic reviews have addressed the role of orthoptic training for convergence insufficiency. A 2005 systematic review of the applicability and efficacy of eye exercises found that small controlled trials and a large number of cases support their use in the treatment of convergence insufficiency.(7)

A 2011 Cochrane review by Scheiman et al evaluated the evidence on nonsurgical interventions for convergence insufficiency in 2011.(8) Six trials (3 in children, 3 in adults) with a total of 475 participants were included in the review, which
searched the literature through October 2010. The 3 trials in children (described next) and 1 of the trials in adults were conducted by the multicenter Convergence Insufficiency Treatment Trial (CITT) study group. (The lead author of this Cochrane review is also the Principal Investigator of the 4 CITT trials.) Scheiman et al concluded that current research suggests that outpatient vision therapy/orthoptics is more effective than home-based pencil push-ups or home-based computer vision therapy/orthoptics for children. In the adult population, evidence of the effectiveness of various nonsurgical interventions is less consistent. A number of gaps in current knowledge, including whether different therapy combinations or durations of therapy might be more effective, were identified in this systematic review.

**Randomized Controlled Trials**

In 2008, the CITT study group reported a randomized controlled trial (RCT) of 221 children (age range, 9-17 years) with symptomatic convergence insufficiency.(9) The children were randomly assigned to 1 of 4 treatment conditions: home-based pencil push-ups; home-based computer vergence/accommodative therapy and pencil push-ups; weekly office-based vergence/accommodative therapy with home exercises; or weekly office-based placebo exercises with home reinforcement of the placebo exercises. Symptoms were evaluated by the Convergence Insufficiency Symptom Survey (CISS), a 15-item survey with a final score ranging from 0 (least symptomatic) to 60 (most symptomatic). Scores of less than 16 were considered “asymptomatic” and a decrease of 10 or more points was considered “improved.” Near point convergency (NPC) and positive fusional vergency (PFV) were used as secondary outcomes. A “normal” NPC was defined as less than 6 cm and an “improved” NPC was defined as an improvement (decrease) in NPC of more than 4 cm from baseline to follow-up. To be classified as having “normal” PFV, a patient had to pass Sheard’s criteria (ie, PFV blur, or if no blur, then a break value at least twice the near phoria magnitude) and have a PFV blur/break of more than 15Δ. Improvement in PFV was defined as an increase of 10Δ or more from baseline to follow-up.

On blinded evaluation after 12 weeks of treatment (99% completion rate), 73% of patients treated with office-based therapy were considered to be successful or improved on the composite outcome of CISS, NPC, and PFV, as defined above, compared with 43%, 33%, and 35% of those treated with home pencil push-ups, home computer exercise, or placebo, respectively. For office-based orthoptic training, the average CISS score improved from 30 at baseline to 15 at the final assessment, which was significantly better than the other 3 groups. The group practicing pencil push-ups at home improved from an average CISS score of 28 to 21 at 12 weeks; similar scores were obtained for the home computer exercise group (from 32 to 25) and the office-based placebo group (from 30 to 22). At completion of the 12-week treatment programs, patients were classified as either asymptomatic (CISS score <16) or symptomatic (CISS score ≥16). Symptomatic patients were offered alternative treatment at no cost. Asymptomatic patients were assigned to home maintenance therapy for 15 minutes a week for the initial 6 months after treatment. At 1-year follow-up, 88% of the 32 children who were asymptomatic at the completion of the 12-week office-based treatment program...
remained successful or improved; 67% of the home-based pencil push-up group remained successful or improved. (10) A limitation of this RCT is that near-point exercises generally consisted of multiple therapies making it to correlate outcomes with specific modalities.

Following publication of the main results of the CITT trial, a number of reanalyses have been performed. The effectiveness of these forms of vision therapy (pencil push-ups, home computer exercises, office-based vision therapy) in improving accommodative amplitude in 164 of the children (74% of 221) who had coexisting accommodative dysfunction with convergence insufficiency was reported by the CITT study group in 2011. (11) Of the 164 children with accommodative dysfunction, 63 (29%) had a decreased amplitude of accommodation, 43 (19%) had decreased accommodative facility (latency and speed of the accommodative response), and 58 (26%) had both. After 12 weeks of treatment, increases in amplitude of accommodation were significantly greater in the 3 active groups (range, 5.8-9.9 diopters) compared with office-based placebo therapy (2.2 diopters). The percentage of children who no longer showed decreased amplitude of accommodation was 91.4% for office-based therapy, 79.3% for home computer therapy, 74.1% for home pencil push-ups, and 35.7% for placebo treatment. Accommodative facility improved by 9.4 cycles per minute (cpm) for office-based therapy, 7.0 cpm for home computer-based therapy, 5.0 cpm for home pencil push-ups, and 5.5 cpm for office-based placebo therapy; only the office-based therapy was significantly greater than in the office-based placebo therapy group. One year after completion of therapy, decreased accommodative amplitude recurred in 11% of 44 children, and accommodative facility recurred in 12.5% of 32 children who did not undergo subsequent treatment.

The effect of successful treatment of convergence insufficiency on parents’ perception of academic behavior in the 218 children who completed this study was also reported by the CITT group. (12) Participants were classified as successful (n=42), improved (n=60), or nonresponder (n=116) after 12 weeks of treatment. This study used the Academic Behavior Survey (ABS), a 6-item survey developed by the CITT study group that quantifies parents’ perceptions of the frequency of adverse behaviors exhibited by their children when reading or performing school work (5 questions) and overall parental concern about the child’s academic performance (1 question). The mean ABS score at baseline was 12.85 of a total possible 24 points and improved by 4.0, 2.9, and 1.3 points in children classified as successful, improved, and nonresponder, respectively. The improvement in the ABS score was correlated with reduction in symptom level (r=0.29), but not to changes in measures of convergence. Although the ABS has not been validated outside of this study, the effect sizes in the successful and improved groups were 0.9 and 0.7, representing a clinically meaningful change.

In 2012, the CITT group reported findings from a post hoc analysis of this RCT related to the effect of convergence insufficiency treatment on specific types of symptoms attributable to convergence insufficiency. (13) The overall CISS scale was divided into 2 subscales: a performance-related subscale consisting of 6 symptoms related to visual efficiency when reading or performing near work, such
as loss of place with reading, and the eye-related subscale consisting of 9 symptoms specific to visual function or asthenopic-type complaints, such as eye pain. Each subscale was reported as an average of the items in its category, with a range of values from 0 to 4. Subjects were grouped into those with or without a "treatment response," defined as an improvement of at least 8 points in their CISS scale. At baseline, scores on the overall CISS scale and the performance-related subscale were statistically significantly higher for children with parent-reported attention-deficit/hyperactivity disorder (ADHD) than for those without parent-reported ADHD (34.1 vs 29.5 for the overall CISS scale; 2.8 vs 2.2 for the performance related subscale). Those with a “treatment response” on the overall CISS score demonstrated improvements in both the performance-related subscale and the eye-related subscale of a mean 1.1 points. Further research is needed into whether the treatment-related improvement in performance-related symptoms seen with orthoptics training translates into improvements in reading performance and attention.

Two earlier RCTs from the CITT group addressed various vision therapies, not specifically office-based vergence training, for convergence insufficiency. A 2005 RCT with 72 children compared base-in prism glasses or placebo reading glasses for all reading and near tasks.(14) Base-in prism glasses were found to be no more effective in alleviating symptoms, improving NPC, or improving PFV at near than placebo reading glasses. Another RCT from the CITT group compared a 12-week program of home-based pencil push-ups with office-based vision therapy/orthoptics or office-based placebo therapy in 47 children.(15) Pencil push-ups, performed 15 minutes a day, 5 days a week, did not alleviate symptoms or signs associated with convergence insufficiency in this small study. Office-based vision therapy (sessions once a week for 12 weeks), supplemented by home exercises, was more effective than home-based pencil push-ups or office-based placebo therapy in reducing symptoms and improving signs of convergence insufficiency in children.

Nonrandomized Comparative Studies
Shin et al reported a nonrandomized comparative study of office-based vision therapy in 2011(16) Fifty-seven children with symptomatic convergence insufficiency, or combined convergence insufficiency and accommodative insufficiency, were divided into a treatment and untreated control group, matched by age and sex. Vision therapy was performed in the school clinic 2 times per week with instructions for home exercises to be performed for 15 to 25 minutes a day during the week. After 12 weeks of office-based vision therapy, the mean College of Optometrists in Vision Development Quality of Life symptom score decreased from 27.07 to 10.40 and the NPC improved from 8.67 to 3.20 in the children with convergence insufficiency. The mean PFV improved from 13.93 to 26.80. Sixty-seven percent of the children were considered to have been cured and 82% were improved. There were no significant changes between baseline and 12-week follow-up for the control group. Of the 20 children in the treatment group who completed a 1-year follow-up, 3 (15%) showed recurrence.
In 2011, Dusek et al reported a nonrandomized comparative study of 134 children with convergence insufficiency who had been referred to a tertiary care center in Austria for reading difficulties. Thirty-two participants refused all treatment offered (control group), and the remaining children were given either base-in prism reading glasses (n=51) or computerized home vision therapy (n=51) based on preference. Parents were instructed to ensure that their child was carrying out the procedure correctly; compliance was verified on a weekly basis. All participants were examined for total reading time, reading error score, amplitude of accommodation, and binocular accommodative facility at baseline and after 4 weeks. Prismatic reading glasses were not worn during testing. Significant improvements were found in the prism glasses and computer exercise groups for total reading time, reading error score, amplitude of accommodation, binocular accommodative facility, and vergence facility. For example, reading speed improved by 21 seconds in the reading glasses group, 12 seconds in the computer exercise group, and 4 seconds in the control group. The mean amplitude of accommodation improved by 1.4 diopters in the reading glasses group, 1.0 diopters in the computer exercise group, and 0.3 diopters in the control group. The only significant improvement for the control group was vergence facility. Although this nonrandomized study is limited by the potential for selection and performance bias, the results suggest that base-in prism reading glasses may be an effective treatment for convergence insufficiency and associated reading problems in children.

Lee et al reported results from a small nonrandomized, controlled trial of vision therapy in children with vergence insufficiency and symptomatic ADHD. Of 1123 children (age range, 8-13 years) who were screened for ADHD, 81 were identified as having symptomatic ADHD; of those, 16 were identified as having accommodative dysfunction on binocular function testing. Eight subjects received vision therapy, and the remainder acted as a control group; eligibility criteria for vision therapy included: high exophoria at near vision (≥6 Δ), exophoria at near vision at least 4 Δ greater than at distant vision, a receded near point of convergence break (≥6 cm), or insufficient PFV at near vision, failing Sheard’s criterion (PFV less than twice the near phorias), or minimum PFV 15 or less Δ base out blur or break. Vision therapy included progressive home- and office-based convergence and accommodative exercises over 12 weeks. At 12-week follow-up, intervention group subjects demonstrated improvements in near point of convergence (11.50 to 4.38 cm; p<0.05), break point of near PFV (11.88 to 32.38 cm; p<0.01), recovery point of near PFV (6.38 to 19.75 cm; p<0.01), and near exophoria (12.00 to 7.81 cm; p<0.05). ADHD symptoms, as measured by the parent-reported Korea-ADHD Rating Scale (K-ARS), improved from 23.25 at baseline to 17.13 (p<0.05) after vision therapy. Only within-group comparisons were reported. Control group subjects did not demonstrate improvements in vision metrics or K-ARS scores.

Noncomparative Studies
In 2013, Borsting et al published results from a single-arm, multicenter, study, the Convergence Insufficiency Treatment Trial–Reading Study. Investigators evaluated parent-reported behavioral and emotional problems at baseline among
53 children with symptomatic convergence insufficiency and changes in parent-reported behavioral and emotional problems after 16 weeks of office-based vergence accommodative therapy. The intervention was consistent with that administered in the CITT trial. Parent-reported ADHD symptoms were assessed with the Connors 3 ADHD index and behavioral/emotional symptoms with the 120-item Child Behavior Checklist (divided into 3 competency-related subscales and 8 symptoms-related subscales). Of the 53 children enrolled, 48 consented to office-based therapy and 44 completed therapy and provided post-treatment data. After completion of therapy, the authors found a significant within-subject improvement in CISS scores and in scores on the Connors 3 ADHD index (effect size d=0.58, significantly different from zero). The subjects also demonstrated statistically significant improvements in the Child Behavior Checklist competency-related subscale related to school performance but not to social- or activities-related performance. On the symptom-related subscales, there were statistically significant improvements in the anxious/depressed, somatic complaints and internalizing problems scales. This study provides some evidence that ADHD-like and emotional/behavior problems may improve among children with symptomatic convergence insufficiency after office-based vision therapies. However, the study’s small size and lack of a control group are substantial limitations that preclude making definitive conclusions about the efficacy of this treatment.

Orthoptic Training for Learning Disabilities
Two studies were published in 2000 and 2001 that focused on the use of tinted lenses and eye patching as a technique to steady binocular vision as a therapy for dyslexia. Stein et al reported results of a randomized trial in which 143 dyslexic children were instructed to wear yellow tinted glasses with or without the left lens occluded.(20) The children were instructed to wear the glasses whenever they were reading or writing. Significantly more of the children who were given occluded glasses gained stable binocular vision in the first 3 months compared with children given the unoccluded glasses (59% vs 36%). Christenson et al, however, found no difference in reading ability in children with dyslexia and abnormal binocular vision who were tested both with and without occluded, blue-tinted lenses.(21) A 2005 systematic review of the applicability and efficacy of eye exercises found that there was no clear scientific evidence to support the use of eye exercises for other disorders aside from convergence insufficiency, including learning disabilities and dyslexia.(7)

In 2014, Ramsay et al reported results from a small nonrandomized controlled study of a computerized vergence training program in 13- to 14 year-old patients with dyslexia.(22) Twelve subjects with dyslexia were treated with the computerized vergence training program, receiving an average of 11.75 sessions over 5 weeks; 12 control students were included who were not treated. All subjects underwent vision testing and were not diagnosed with convergence insufficiency. The computerized training program involved the generation of a computerized stereogram, which appears in 3 dimensions with convergent vision. For the intervention groups subjects, the reading speed improved from 87.83 words read per minute to 95.58 words read per minute from baseline to follow-up (p<0.006), while the reading speed was unchanged from baseline to follow up for
the control group (85.00 words per minute at baseline to 89.37 words per minute at follow-up; p<0.123). The mean improvement in reading speed from baseline to follow-up did not differ significantly between groups (p<0.123).

Several studies report that poor reading in children who do not have dyslexia or attention deficits may be related to impairments in accommodation or convergence, suggesting the need for an ophthalmologic and orthoptic evaluation.(23-25)

**Ongoing and Unpublished Clinical Trials**

Some currently unpublished trials that might influence this review are listed in Table 1.

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<tr>
<td>Unpublished</td>
<td>Effectiveness of Home-Based Therapy for Symptomatic Convergence Insufficiency</td>
<td>204</td>
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NCT: national clinical trial.

**Summary of Evidence**

The evidence for use of office-based orthoptic training in individuals who have convergence insufficiency includes a TEC Assessment, several randomized controlled trials (RCTs), and nonrandomized comparative studies. Relevant outcomes are symptoms and functional outcomes. The most direct evidence on office-based orthoptic training comes from a 2008 RCT that demonstrated office-based vision/orthoptic training improves symptoms of convergence insufficiency in a greater percentage of patients than a home-based vision exercise program consisting of pencil push-ups or home computer vision exercises. Subanalyses of this RCT demonstrated improvements in accommodative vision, parental perception of academic behavior, and specific convergence insufficiency-related symptoms. However, in this trial as in others, the home-based regimen did not include the full range of home-based therapies, which may have biased results in favor of the orthoptic training. The evidence is insufficient to determine the effects of the technology on health outcomes.

The evidence for office-based orthoptic training in individuals who have learning disabilities includes a TEC Assessment and nonrandomized comparative and noncomparative studies. Relevant outcomes are functional outcomes. A 1996 TEC Assessment did not find evidence that orthoptic training improved outcomes for individuals with learning disabilities. Since that publication, peer-reviewed studies have not directly demonstrated an improvement in reading or learning outcomes with orthoptic training. At least 2 earlier studies that addressed other types of vision therapies were mixed in reporting improvements in reading. The evidence is insufficient to determine the effects of the technology on health outcomes.
Clinical Input Received From Physician Specialty Societies and Academic Medical Centers

While the various physician specialty societies and academic medical centers may collaborate with and make recommendations during this process, through the provision of appropriate reviewers, input received does not represent an endorsement or position statement by the physician specialty societies or academic medical centers, unless otherwise noted.

In response to requests, input was received from 4 physician specialty societies (5 reviewers) and 3 academic medical centers while this policy was under review in 2010-2011. Although input supported the use of office-based orthoptic training when home-based therapy had failed, some reviewers indicated that home-based therapy would typically include more exercises than pencil push-ups. Recommended were push-up exercises using an accommodative target, push-up exercises with additional base-out prisms, jump-to-near convergence exercises, stereogram convergence exercises, recession from a target, and maintaining convergence for 30 to 40 seconds.

Practice Guidelines and Position Statements

In August 2009, the American Academy of Pediatrics (AAP), American Academy of Ophthalmology (AAO), American Association for Pediatric Ophthalmology and Strabismus (AAPOS), and the American Association of Certified Orthoptists (AACO) issued a joint policy statement concerning pediatric learning disabilities, dyslexia, and vision.(26) For vision therapy, the policy concludes:

“Currently, there is no adequate scientific evidence to support the view that subtle eye or visual problems cause learning disabilities. Furthermore, the evidence does not support the concept that vision therapy or tinted lenses or filters are effective, directly or indirectly, in the treatment of learning disabilities. Thus, the claim that vision therapy improves visual efficiency cannot be substantiated. Diagnostic and treatment approaches that lack scientific evidence of efficacy are not endorsed or recommended.”

In 2011, AAP, AAO, AAPOS, and AACO published a joint technical report on learning disabilities, dyslexia, and vision.(1) The report 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.”

Medicare National Coverage

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


**Billing Coding/Physician Documentation Information**

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**ICD10 Codes:**

- **H51.11** Convergence insufficiency and excess code range
- **H51.12** Specific reading disorder

**Additional Policy Key Words**

N/A

**Policy Implementation/Update Information**

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State and Federal mandates and health plan contract language, including specific provisions/exclusions, take precedence over Medical Policy and must be considered first in determining eligibility for coverage. The medical policies contained herein are for informational purposes. The medical policies do not constitute medical advice or medical care. Treating health care providers are independent contractors and are neither employees nor agents Blue KC and are solely responsible for diagnosis, treatment and medical advice. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, photocopying, or otherwise, without permission from Blue KC.