Accommodation Dysfunctions (Focusing)

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Accommodation is the ability to maintain clear and comfortable focus when reading or writing, and using a computer, Ipad or Iphone. Accommodation can fatigue due to fatigue of the brain's control system (it is not a muscle problem), resulting in blurred vision or double or moving print, eyestrain or frontal and temporal headaches, reduced concentration (looking away from close work), reduced comprehension (having to frequently reread for meaning), reduced fluency and accuracy (losing place, missing words, jumping lines), and sometimes over time to avoidance of close work tasks.

Accommodation problems can often affect convergence ability, or keeping your eyes turned in together to aim at the print.

Accommodation dysfunctions can also involve problems changing focus, especially after reading or computer use for a time, resulting in a short period of blur looking up, and slowness and mistakes copying from the board.

Treatment

Accommodation problems are commonly treated by low powered plus lenses to normalise focusing accuracy and reduce fatigue of focusing for near vision tasks. This is a different approach to just measuring the power of the eyes on the wall chart, and prescribing this distance only focus. If necessary vision therapy can be carried out to develop more normal abilities to sustain focus for extended periods, to change focus from book or computer to the board and back; and to ensure focusing and convergence abilities are working together as well as possible

A brief summary of references on accommodation dysfunction

Seven papers authored by highly credible academics and clinicians - Weisz, (1979)[1]; Hoffman (1982)[2]; Aziz et al., (2006)[3]; Rouse, (1987)[4]; Grisham et al. (1991)[5]; Sterner et al. (1999)[6]; Ciuffreda, (2002)[7] demonstrate accommodation disorders and a number of vergence disorders, in particular convergence insufficiency and decompensating exophoria may respond to treatment, and that, when they accrue, treatment effects are durable.

In 2002 Kenneth Ciuffreda stated, *"The findings (of the study) clearly support the validity of optometric vision therapy. Furthermore, the results are consistent with the tenets of general motor learning."*

More important studies [8] [9] [10] demonstrate that accommodative facility training is effective, and that, "these results, and the results from the many earlier studies of this nature are believable."

Scheiman et al. (2011)[11] also noted, "Vision therapy is effective in improving accommodative amplitude and accommodative facility in school-aged children with symptomatic CI and accommodative dysfunction."

A large scale Randomized Clinical Trial by Scheiman et al. (2011) (representing the Convergence Insufficiency Treatment Trial Study Group) on accommodative dysfunction, conclusively demonstrated the efficacy of vision therapy, noting that: "Vision Therapy is effective in improving accommodative amplitude and accommodative facility in school-aged children with symptomatic CI and accommodative dysfunction." [12]

The Clinical Practice Guidelines (CPG) published by the American Optometric Association on Accommodative and Vergence Dysfunction, with 196 references, was revised in 2010 and published in 2011. It concludes that the best treatment often involves a combination of lenses, prisms, and/or vision therapy, while noting that proper treatment usually results in rapid, cost-effective, and permanent improvement in visual skills [13].

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[4] Rouse, M. W. (1987) Management of binocular anomalies: efficacy of vision therapy in the treatment of accommodative deficiencies. Am. J. Optom. Physiol. Opt. 64,415–420

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[7] Ciuffreda, K. J. (2002) The scientific basis for and efficacy of optometric vision therapy in nonstrabismic accommodative and vergence disorders. Optometry 73,735–762

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[10] Brautaset, R., Wahlberg, M., Abdi, S. and Pansell, T. (2008). Accommodation insufficiency in children: are exercises better than reading glasses? Strabismus 16,65–69

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[12] Scheiman M et al. Treatment of accommodative insufficiency in children:results from a randomized clinicial trial. Optom Vis Sci. 2011 Nov;88(11):1343-52

[13] Cooper JS, Burns CR, Cotter SA, Daum KM, Griffin JR, Scheiman MM. Optometric Clinical Practice Guideline: Care of the Patient With Accommodative and Vergence Dysfunction - Reference Guide for Clinicians. St. Louis, MO: American Optometric Association, 2011.