

MULTIMODAL TREATMENT OF CONGENITAL NYSTAGMUS: A CASE STUDY UPDATE

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Abstract

In a previous article, we described the diagnosis and treatment of a male adolescent who sought optometric care for congenital nystagmus and decreased distance vision, both of which were hindering his ability to obtain an unrestricted driver's license. Treatment consisted of conventional optometric vision therapy and prisms to ameliorate the nystagmus. Periodic re-evaluations indicated that all visual dysfunctions had markedly improved as measured by objective (eye movement recordings) and subjective means. The patient, his family, and the authors then decided that the treatments should continue past basic remediation for further consolidation and possible enhancement of vision. Three more months of therapy were completed. We report the findings after the additional three months, and after six months without further optometric intervention.

Key Words

congenital nystagmus, cosmesis, prisms, strabismus, vision therapy

In an earlier article,¹ the detailed case findings, including objective eye movement recordings, were described in a teenager with congenital jerk nystagmus before and after four months of conventional in-office and home vision therapy. The patient had failed the motor vehicle vision screening, and now wished to improve his vision sufficiently to pass the examination. His therapy-related vision improvements were considerable and manifold; they included both motor and sensory aspects, as well as cosmesis. In particular, during the latter phase of vision therapy, the nystagmus became markedly reduced during all testing and casual observation; this was confirmed at home by his mother. And, he now met the vision requirements to obtain a driver's license.

Although vision therapy was planned to cease at this point, the results were so encouraging to all that it was extended for three months to allow for additional reinforcement, consolidation, and possible enhancement.² In this brief report, the most recent findings following the additional three months of therapy, as well as for the subsequent six month follow-up, are presented.

The earlier major clinical findings, as well as the newer ones, are shown in Table 1. All earlier vision gains were either maintained, e.g., near cover test (CT), or enhanced, e.g., Worth-4-dot test. Perhaps most interesting and relevant was the progressive nystagmus reduction: it changed from large and constant prior to therapy, to small and intermittent at the end of the initial four months of therapy; as per the latest observations, it further decreased from being hardly present to being undetectable at the six month follow-up.

These detailed and well-documented case findings are important for several reasons. First, they clearly demonstrate the success and improvement in vision function and cosmesis one can attain in the treatment of congenital nystagmus using conventional optometric vision therapy and proper corrective lenses incorporating prisms. These results may have been enhanced with the use of contact lenses, which provide proprioceptive information that can be used to reduce the nystagmus, as well as providing a larger and better quality retinal image to promote fusional and fixational abilities.³ However, the patient declined. Second, they demonstrate both the short- and long-term efficacy of vision therapy in an adolescent. Third, the therapy resulted in a remarkable cosmetic improvement, as the nystagmus was no longer detectable by gross visual observation. This clearly has important social and psychological implications. Fourth these improvements allowed the patient to attain his primary goal, namely obtaining a driver's license, and therefore provided a greater degree of independence. Lastly, beyond this goal, the improved visual acuity and reduced nystagmus will likely allow the patient to perform reading and related sustained near vision tasks more efficiently both in college and later in the computer dominated workplace.^{4,5}

References

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Table 1.					
Comparison of Patient's Clinical Findings Over the Course of Vision Therapy					
		Pre-Training (with Fresnel prism, 10 BI PD total)	Post-Training (Trial Frame with prism, 6 PD total)	3-Month Progress Evaluation with Continued VT * (Rx with ground-in BI prism, 6PD total)	6-Month Follow-Up ** (Rx with ground-in BI prism, 6PD total)
VA	OD	20/70-2	20/40-2	20/30-3	20/40+2
	OS	20/60-2	20/40-1	20/30-2	20/40+2
	OU	————	20/40-1	20/30-2	20/30-2
Distance CT sc		35-40PD CAXT	————	————	Ortho
Distance CT cc		30-35PD CAXT	Approx. ortho; w/ prolonged testing, 8-10PD XP	Ortho	Ortho
Near CT sc		2-3PD R Hypo 20PD CAXT	————	————	Ortho with intermittent L exo drift
Near CT cc		20PD XP'	6-8PD XP'	8PD XP'	6-7PD XP'
CNP cc		30-36 in./48 in. (penlight target)	5 in./7 in. (penlight target) 1 in./3 in. (accom. target)	TTN; maintained with repetition (penlight target)	TTN; also TTN without Rx (penlight target)
Worth 4 Dot		Constant diplopia	Fusion < 3 ft. Diplopia > 3 ft.	————	Fusion at all distances
WIRT		Animals: 200 arc sec Circles: none	Animals: 100 arc sec Circles: 80 arc sec	————	Circles: 80 sec arc
Randot		————	Animals: 200 arc sec Circles: 70 arc sec	————	————
Randot E		————	————	————	Passed
Nystagmus (Gross visual observation)		Large and constant	Small and intermittent	Hardly present	Undetectable

* Vision training was continued for further reinforcement and enhancement.

** During this 6 month period, no vision training was performed.

CA= Constant Alternating

CT= Cover Test

CNP= Convergence Near Point

PD= Prism diopter

TTN= To the nose