

# VIEWPOINT

## PREVENTION & EARLY INTERVENTION WITH PLUS FOR NEAR

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### INTRODUCTION

It is scientifically documented, although usually ignored clinically, that our accommodative abilities begin to wane in our mid to late teens, if not sooner.<sup>1</sup> On this basis I consider the teen years as the onset of presbyopia; this is a condition that typically becomes obvious several decades later when the regression of accommodative amplitude finally reaches a person's habitual reading distance. It is in response to this realization that I propose earlier intervention with convex lenses (plus) for near than is presently practiced. This more proactive use of plus for close work is related to, but other than what is typically considered preventative care.

I consider the *early use* of plus for near as the period of time starting during the teen years, and terminating at the classically recognized onset of presbyopia. I propose that early intervention with appropriate plus at near can help enhance most people's accommodative and convergence performances during prolonged close work. It has the potential to prevent, or at least minimize unnecessary wear-and-tear on the system even prior to the teen years. This is likely true for the majority of people with the possible exception of those with significant convergence difficulties who must be scrutinized and/or monitored more closely.

I have always worked under the assumption that there's no substitute for an ounce of prevention. However, as a result of rediscovering the accommodative re-

gression timetable, I have come to view the early use of plus as something beyond prevention; its purpose is to support a mechanical/functional aspect of the visual system that is already on the wane. Another aspect is the level of inefficiency with which many, if not most of us, meet everyday visual demands. Judicious application of plus for near has the potential to: decelerate accommodative degradation, enhance efficiency, minimize negative adaptations and maximize comfort, performance and future development of the visual process.

### PLUS LENSES AS COMPENSATORY DEVICES

The use of plus for near for certain conditions is part of accepted optometric treatment protocols. Among these conditions are: presbyopia,<sup>2</sup> esophoria and accommodative disorders,<sup>3</sup> pseudoconvergence insufficiency,<sup>4</sup> and certain myopias.<sup>5</sup> In these circumstances the lenses act to ameliorate conditions that have already developed; as such, the intervention consists of a compensatory device fulfilling a compensatory strategy. There is often no long-term improvement that is directly and solely the result of utilizing lenses in this fashion. For example, plus lenses are worn in cases of accommodative esotropia to artificially lessen the accommodative demand, thereby reducing the synkinetic action on convergence in proportion to the lens power. However, this occurs only while the lenses are being worn. For the most part, this type of strat-

egy compensates for the surface issues, such as, in this example, the eye turn. Further, it does little to address the root of the problem such as the inability to adequately interpret and respond to visual-spatial demands. Finally, these compensatory measures do little to promote improved development of the visual process.

The clinical signs and symptoms that are the rationale for the compensatory use of plus for near are, most often, not the primary issue. I propose they represent evidence of the person's attempts to manage his visual demands more effectively and of his style of so doing. The primary issue for me is the underlying condition that caused the conventionally diagnosed visual problem.

### RATIONALES FOR THE USE OF PLUS AT NEAR

I perceive a general acceptance in the eye care communities of the assumption that essential plano (no add) at near is the appropriate treatment unless there is adverse hyperopia or an accommodative or accommodatively related binocular issue. This concept has enjoyed almost universal acceptance based on the assumption that most people operate effectively without lenses for near prior to the age of 40. On the surface, this may be a relatively acceptable assessment. However, the assumption is frequently made without a sufficiently thorough clinical investigation of all involved visual mechanisms and with the belief that presbyopia begins around age 40.

Consequently, some time ago I lost faith in this assumption as I considered other options and gained clinical experience. As a result, my working assumption has come to be that appropriate plus is preferable to plano at near. There may be no research providing evidence that plus for near is preferable. However, to my knowledge, no research has indicated that plano at near is appropriate, assuming an absence of significant hyperopia or an accommodatively related dysfunction, until what is currently held to be the onset of presbyopia. This concept has only existed and been perpetuated by default. I thank Dr. Greg Kitchener for expressing this idea so succinctly some years ago.

I propose that because it is accepted that accommodation begins its downward spiral during the teen years,<sup>1</sup> the early, appropriate use of plus for near can provide support to a function that is beginning to deteriorate. Plus for near also has the potential to prevent future visual problems that often result from inefficient visual performance. This is why I prescribe appropriate plus for all close-work lasting more than 15 minutes for almost all my patients. I believe it is in their best interest to take this action before clinical signs and patient symptoms appear.

### **PROTOCOLS FOR PRESCRIBING**

I prescribe the minimal amount of plus I find that provides meaningful benefits. I do not want the person wearing so much plus that she no longer actively accommodating. The point is to support the function, not to take it over artificially. Used in this way, the lenses act as a catalyst. I believe these lenses stimulate changes in the manner that light is delivered to the retina, which in turn affects consequent patterns of neurological response. I stress the importance of consistently wearing the lenses for all reading, paper and pencil tasks and computer activities of greater than 15 minutes duration.

I prefer that youngsters initially wear the lenses as much as is feasible indoors. This serves to foster their acceptance of wearing glasses. Further, most indoor activities involve working distances less than 10 feet; I consider this distance to fall into the category of decreased freedom of visual movement and opportunity, and increased potential for strain. I alter the wearing schedule depending on the individual's changes in performance and clin-

ical findings. Eventually, the goal is that the plus for near be worn for reading, writing and computer-based activities.

There are many ways to determine the lens power and wearing schedule, and it is neither my intention nor my desire to promote a specific protocol. However, there are several considerations that I offer as guidelines:

#### **I rarely prescribe more than +0.75.**

As previously stated, I want the lenses to be a catalyst; it is not what the lenses do but what the person does in response to the lenses that is the key. I do not want the lenses to take over the person's accommodative responsibilities. I believe these lenses change the instructions to the brain in a safe and gentle way that improves a person's relationship with the volume of visual space.

#### **I take the person's daily routine, environment and overall visual profile into account.**

How much close work is being done? How much time is spent indoors? How is this person handling the demands placed on her? What is the overall visual style—eso/exo? Tight/ loose? Persistent/avoidant? Motivated/ indifferent?

#### **Stresspoint Retinoscopy is often my primary clinical probe in this regard.<sup>6</sup>**

Typically, there will be a noticeable and positive change in the location of the stresspoint response with the person wearing the appropriate plus lenses. This implies that the lenses will be well tolerated immediately and will reduce visual stress.

#### **I look for immediate positive changes in performance.**

Certain probes such as improved near point of convergence, pursuit and saccadic eye movements and reading aloud may be done with the proposed near Rx and compared to the performance without lenses. I often have the luxury of extended working relationships with my young patients because of their need for visual training. I observe the patient's performance and product with and without lenses in clinical probes such as cheirosopic tracings,<sup>3</sup> Van Orden Star,<sup>6</sup> etc. It is not uncommon for performance and product to improve noticeably and im-

mediately with the appropriate plus for near.

#### **I prefer single vision lenses whenever possible or flat-top bifocals.**

I prefer to have young people in single vision lenses if distance acuity is not adversely affected by the plus lenses. This avoids purposefully or inadvertently not using the reading portion of a bifocal. However, when there is already a distance prescription I recommend a flat-top bifocals.

I have reservations about the narrow reading channel and the distortions inherent in progressive lens technology especially when prescribing early plus for near. The narrow channel serves to make head movement more effective than eye movements. Further, the peripheral distortions interfere with the transmission of accurate peripheral input. I also believe that the presence of graduated add powers tends to disrupt the relationship between the person and the visual process. Thus, standard single vision or flat-top bifocal lenses require a more uniform and natural, albeit slightly modified accommodative response for all distances. The variable lens power of the progressive lens reduces the accommodative demand differently at each distance. I propose that this can disrupt the wearer's internal metric of the plane of regard and volume of space, thereby setting up conditions for chronic confusion and long-term inefficiency.

### **SUMMARY**

I have outlined a rationale and method to treat the established fact that accommodative regression begins during the teen years.<sup>1</sup> The method entails the early use of plus for near. I believe this clinical intervention can provide significant positive changes in many aspects of our patients' lives. I have found that the early use of plus for near can enhance performance, comfort and development of the visual process. In the context of this article, we should not wait until the accommodative mechanism reaches the stage of what is defined as presbyopia, where it is everlastingly symptomatic. Rather, we can provide our patients with a method of care that is unique to those who ascribe to a behavioral/function model of the visual system.

The concept that I propose is inherent and based in what Dr. Robert Kraskin elo-

quently recommended in *Lens Power In Action*:

*Implied, then, is the recognition and understanding that the appropriate utilization of lenses is absolutely essential to prevent visual problems, and protect, control, maintain, and enhance the visual process. [The crucial issue is] LENSES—that is, the optometrist’s utilization of lenses for the purpose of providing people with benefits that exceed the more limited concepts of vision in which lenses are prescribed merely to compensate for an already existing condition.*<sup>7</sup>

### References

1. Moses RA, Ed. Adler’s Physiology Of The Eye, Clinical Application, Seventh Edition. St. Louis: C.V. Mosby Company, 1981.
2. Werner DL, Press LJ. Clinical pearls in refractive care. Boston: Butterworth Heinemann, 2002.
3. Scheiman M, Wick B. Clinical management of binocular vision, 2<sup>nd</sup> ed. Philadelphia: Lippincott, Williams & Wilkins, 2002.
4. Richman JE, Cron MT. Guide to vision therapy. South Bend, IN: Bernell Corp, 1989.
5. Sherman A, Press LJ. Myopia control: taming the refractive beast. In: Press LJ, ed. Applied concepts in vision therapy. St. Louis: Mosby, 1997:180-87.
6. Press LJ. Strabismus: Challenging the adaptation. In: Press LJ, ed. Applied concepts in vision therapy. St. Louis: Mosby, 1997:89-104.
7. Kraskin RA. Lens Power In Action. Santa Ana, CA:OEP Foundation, 2003.

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*EDITORIAL continued*

educators. He implores optometric education to stop promoting:

*Dyslexia as primarily a problem of the eye that is best treated with ocular exercises....Ocular exercises as worthwhile treatments for ocular disease and/or ametropia, except in cases of mild accommodative esotropia.... The Bates method (and all variations thereof) as a legitimate or valuable means for improving visual acuity.*

These allegations are made without documentation and it is apparent that Dr. Nordan is either totally ignorant or has been grossly misinformed of the optometric curricula that are taught at the schools and colleges of optometry.

Dr. Nordan’s advice goes beyond vision therapy. He admonishes optometrists and optometric educators to cease from promoting and using: hard contact lenses to stop myopic progress, orthokeratology to correct refractive error, the practice of undercorrecting distant glasses to stop the progression of refractive errors. These opinions are made without the benefit of references to published scientific studies, and with apparent sparse knowledge of the available literature.

His conclusion is that:

*If optometrists are poised to increase their scope of practice and expertise in eye care (whether through patients’ choice or an insurance company’s mandate), then it is time for these practitioners and schools of optometry to hold themselves to a higher standard.*<sup>10 (p34)</sup>

As a counter point I propose that: *If some ophthalmologists and ophthalmological journals seek to criticize and discredit optometry, it is time for these entities to stop “shooting from the hip” and to significantly increase their levels of scholarship. They should hold themselves to higher journalistic standards as practiced in peer reviewed journals. Guidelines can be found in the Uniform Requirements for Manuscripts submitted to Biomedical Journals at [www.icmje.org](http://www.icmje.org).*

### References:

1. Hoskins HD, Fleming M. Letter to the editor. J Behav Optom 2004; 1:17
2. Zaba JN, Mozlin R, Reynolds WT. Insights on the efficacy of vision examinations and vision screenings for children first entering school. J Behav Optom 2003;14:123-6.
3. Suchoff IB. Editor’s response. J Behav Optom 2004; 1:17-8.
4. Donohue SP. How often are spectacles prescribed to “normal” preschool children? J AAPOS 2004; 8:224-9.
5. Lichenstein SJ. Editorial. A look at the reality of spectacles being prescribed to “normal” preschool children. J AAPOS 2004; 8:222-3.
6. Suchoff IB. Editorial- The two faces of ophthalmology. J Behav Optom 2004;5: 114, 139.
7. Kushner BJ. Editorial. The treatment of convergence insufficiency. Arch Ophthalmol 2005; 123: 100-01.
8. Scheiman M, Mitchell GL, Cotter S. et al. The Convergence Insufficiency Treatment Trial (CITT) Study Group. A randomized clinical trial of treatments of convergence insufficiency in children. Arch Ophthalmol 2005; 123:114-124.
9. Press LJ. Guest editorial. The “gold standard” study of vision therapy has arrived & has fostered an ophthalmological paradox. J Behav Optom 2005; 2: 37, 48.
10. Nordan LT. Optometry, heal thyself. Cataract & Refr Surg Apr 2005: 33-4.