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A Clinical Analogy for Close Working Distances: Stress and Stress Relief

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Stress demands change. I feel it can occur any one of three ways. Here is a sample way of explaining a habitual working distance inside the Harmon distance, its impact on vision, and treatment options.

"Suppose I put a 25 lb. (11 kg) sack of flour on your back behind your shoulders. Would you walk bent over or normal?"

You are looking for the answer "bent over". If they say, "normal" then continue to increase the amount of the weight until they say, "bent over".

"What if I left it on your back for the next six hours and then took it off. Wouldn't it feel good to straighten up and stretch? That's **easily reversible change!** Now suppose I left that sack of flour on your back for six months. When I took it off would you straighten right up?"

You are looking for the answer "no". If you need to, keep making the time with the flour on the back longer and longer until they say, "no".

"You would probably have to exercise and stretch to regain your posture. Maybe even sleep on a board for a few nights. This is an example of **change with effort!** Suppose we left that weight on your back for six years?"

For child: "How much taller will you be in six year? Do you think you will grow crooked or straight with that weight on your back?"

"All the bones and all the muscles will be crooked supporting that extra weight. This is the third kind of change which is **not easily reversible!** (even with surgery) You have grown crooked and you have altered the way you do everything because of a weight on your back."

"The weight is a strain on your back. Holding things close to your eyes is a strain on your visual system. Right now you are in that **easily reversible** (or **reversible with effort**) visual stage. Here are some things you can do to change your habit of holding things too close to your eyes."

Visual hygiene, plus lenses, and/or VT can be discussed here as options.

"Suppose I was a back doctor and you came in complaining of a back ache and you had that sack of flour on your back. If I was a good doctor, what would I do?"

Looking for "take that sack off my back" as an answer.

"That's what these glasses for reading, desk work, and computers do for your eyes. They take the strain off, so your eyes grow up straight and strong. You can still get all your work done, probably even better, without your visual symptoms. These are (*use one of the following:*) stress relieving, preventive, protective lenses.

Hart Chart Past, Present, and Future

Gary Etting, O.D., F.C.O.V.D.

The standard Hart chart is placed at the patient's eye level. The patient is asked to read the chart left to right with the following complication: Before reading out loud the letter fixated, he/she must call out the letter that precedes it in the alphabet, then the letter itself, and then the letter in the alphabet that follow it.

Example: if the letter is "A", the patient would say "Z A B" If the letter is "Z", the patient would say "Y Z A". Therefore, if there are 10 letters per line, 30 letters will be called out.

To make the activity more challenging you can do the following:

- A. Each fixation can be done to a metronome
- B. Walk towards and away from the chart with the metronome
- C. Hold pipe cleaners out in the periphery for extra awareness
- D. Only call off the letter before the letter fixated on one line and then the letter after on the next line. You can also make up many variations on this such as changing from before to after the actual letter based on an outside verbal signal given by the therapist. This would keep the patient from automating the whole procedure and having to constantly problem solve. This would be excellent for athletes.

Back to Bifocals for Young Esophoric Myopes?

Robert Sanet, O.D., F.C.O.V.D.

The following is an abstract of an article recently published in the Journal of the American Optometric Association by Fulk and Cyert:

A short-term pilot study reexamines the utility of bifocals in slowing myopia progression in children with near-point esophoria. Subjects were 28 children (girls < 13 years old, boys < 14) with myopia exceeding 0.50 D in both eyes and near-point esophoria. Fourteen were given single-vision lenses, while 14 received bifocals with a +1.25 D add in a flat-top segment 28 mm wide.

The bifocal wearers demonstrated myopia progression at an annual rate of 0.39 D/yr. over 18 months, compared to the 0.57 D/yr. rate of single-vision wearers. Even more significant was the difference in the rate for the last 6 months of the study: 0.37 D/yr. vs. 0.8 D/yr. Apparently it takes about a year for the effect of the bifocal wear to manifest itself. The children wearing bifocals could tell that their visual comfort was improved, and had little problem adapting to their glasses. At the end of the study 10 of the 14 chose to continue with the bifocals.

The authors attribute these results to including only subjects with esophoria. Previous studies showing no significant differences between bifocal and single-vision lenses did not differentiate children with near-point esophoria and those with exophoria.

Dr. Sanet states, "Although not stated anywhere in the article, this study is consistent with what would be expected from a behavioral perspective. Skeffington's syndromes of embeddedness did not include the 13B finding (*near phoria through the subjective*). However, it is my observation that incipient or early myopes measure esophoria on the 13B finding. As they become more embedded, they re-calibrate and reduce their esophoria and more into exophoria. Myopic exophores tend to be more embedded and less responsive to a lens prescription alone. These patients often need an Rx with yoked prisms combined with a program of optometric vision therapy in order to stabilize or reduce the rate of progression of their myopia."

On this same article Dr. Paul Harris felt that although the article showed some significant effect from the use of bifocals, the actual protocol used by the researchers reduced the effect. He wrote the following letter to the editor which has been accepted for publication and which should appear in the next issue of the Journal of the American Optometric Association.

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Journal, American Optometric Association

Dear Editor;

I eagerly turned to the article titled, "Can bifocals slow myopia progression?" in the December issue (Vol 67, no 12, pp 749-54) of the Journal of the American Optometric Association. As the director of the *Kraskin & Skeffington Institute*, the *International Center for Education in Behavioral Optometry* and the founder of the *Baltimore Academy for Behavioral Optometry*, I teach courses which cover the use of plus lenses in the management of nearpoint vision problems. Although the article as published showed some positive effect, its protocol was seriously flawed, as have been nearly all research protocols of this type. I am continually amazed at the resources that are consumed attempting research where the protocol dooms the study to either failure or minimal effect before the first patient has been seen.

A significant body of literature exists related to the use of plus lenses.¹⁻⁵ Prescribing plus lenses to reduce a patient's stress response to sustained near point activity must be done in an individualized way. Studies by Darrell Boyd Harmon show that statistically the most appropriate lens can be derived for a group or cohort of people.⁴ However, once derived for a group, due to high individual variance and high sensitivity to slight changes, the plus lens power derived from a group cannot be used for all of the members.

The study conducted by Fulk and Cyert, as well as every study that I am aware of relating to progressive myopia which looked at the use of plus for near, has selected for its study a single lens power to be used by all subjects. NOTE: Each study has used different criteria to derive the lens power used, but all used the same power on all members of a particular group. This is a critical flaw that was carried through in the work by Fulk and Cyert.

A critical aspect of understanding the use of plus lenses to decrease the stress response of the patient at near is the fact that there is a high degree of sensitivity to near point plus and that each person is different. Dr. Darrell Boyd Harmon and Dr. Robert Kraskin, in the development of their technique called *stress point retinoscopy*, have provided a method of assessing the degree of lens which will maximally decrease near point stress responses.⁵ Other physiological data, as well as a number of articles,²⁻³ clearly demonstrate that the amount of plus varies on an individual basis, as well as validating the concept that too much plus is just as bad or ineffective as too little.

The protocol of Fulk and Cyert led them to select +1.25 adds for all members of the study, based on esophoria. This decision must be called into question. It would be rather easy to set up a protocol that could be made inter-tester reliable and that would take into account the individual differences between members of the study, yet have a uniform criteria upon which to provide each subject with the lens which clearly reduces near point stress response maximally. In other words, an algorithm could be provided which would be the same for all members of a test group, but which would yield different lens powers depending on the variances and needs of each individual. In this way, the effects of the lenses would be maximized and a significantly greater positive effect of each lens would be obtained.

It is my hope that in the future academicians who have procured funds for much needed research do not squander those funds and the good will of the public by using protocols which have little hope of showing effects. These flaws reveal themselves most when research is being performed in a clinical area in which significant expertise exists about which the academicians are generally either uninformed or misinformed. It seems that Fulk and Cyert are not in tune with how the majority of those who work with patients to prevent progression of myopia go about deriving the appropriate plus lens power for near.

What is needed are more open lines of communication between those doing research in clinical areas and with the clinicians who provide this type of care. Proposed protocols such as those used by Fulk and Cyert could have been circulated among a panel of clinicians in behavioral vision care and the points raised in this letter would have easily surfaced before so much time, effort, and energy were consumed.

To avoid these types of problems in the future, the *Kraskin & Skeffington Institute* offers to assist anyone doing clinical research relating to the use of lenses, prisms, and/or vision therapy by reviewing, or have reviewed by appropriate experts, any proposed research protocol for the purpose of making recommendations to be communicated to the researcher. By acting as a bridge between those who are best equipped to do research and those equipped with the clinical expertise, better research should result, as well as better communication between academia and clinicians.

Sincerely,

Paul Harris, O.D., F.C.O.V.D., F.A.C.B.O.

Director of Education

References

1. Birnbaum MH. Management of the low myopia pediatric patient, J Am Optom Assoc 1979;50(11):
2. Greenspan SB. A study of near point lenses: effects on body posture and performance", OEPPF, 1975
3. Greenspan SB. Behavioral effect of children's nearpoint lenses, J Am Optom Assoc 1975,46(10):
4. Harmon Darrell Boyd. "Notes on a dynamic theory of vision" OEPPF
5. Kraskin, Robert A., "Lens Power in Action", OEPPF both volumes, October 1981 - September 1983

Is ADD & Dyslexia Genetic?

At a recent meeting for 125 occupational and physical therapists, special education teachers, psychologists, speech pathologists and audiologists Dr. Harris shared the podium with a Dr. Horn, a neuro-psychologist. She spoke about **dyslexia** and **attention deficit disorder (ADD)**. The central theme of her talk was that both these conditions have been identified with and are now being understood as genetic. In several of the definitions she gave the theme that the person has a genetic brain problem was echoed again and again. Here are some examples:

LD Definition of the 1988 National Joint Committee on Learning Disabilities

"*Learning disabilities* is a general term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities. These disorders **are intrinsic to the individual, presumed to be due to central nervous system dysfunction**, and may occur across the life span." (bolding added)

Her definition of *dyslexia* was:

"Dyslexia is one of several distinct learning disabilities. It is a specific language-based disorder **of constitution origin** characterized by....."

She stated that the key underlying deficit which the central nervous system problem yields is in the area of phonologically awareness. Thus, strong emphasis on phonics approaches is necessary from her perspective. The most frequently observed key symptoms she pointed out are the following:

- lack of awareness of sounds in words

- poor spelling
- poor reading comprehension (better when listening)
- slow reading rate
- aversion to reading
- similar problems among relatives

She had an impressive listing of current research findings (available on request) from which the following is extracted. This is the section entitled:

Genetic/Neurophysiological Research Findings

- Dyslexia runs in families
- HLA region of Chromosome 6 is implicated
- Brain symmetry - Planum temporale in right and left hemispheres is equal in size
- Researchers have found neuronal loss, minor cortical malformation, ectopias of focal microgyria
- Atypical cortical activation in the left temporal region; left temporoparietal region and superior temporal cortex
- Thalamus smaller on the right; fewer cells in the lateral geniculate nucleus
- Corpus callosum larger (female dyslexics)
- Believe that mechanisms that cause dyslexia in male and female brains are the same, but that the timing is different
- Regional blood flow studies indicates that deficiency in word recognition skills is associated with less than normal activation in the left temporal region
- PET studies indicate that dyslexic adults have greater than normal activation in the occipital and prefrontal regions of the cortex
- Angular gyrus of parietal lobe found R > L

In addition she included in her handouts an article from the November 1996 Scientific American entitled, "Dyslexia - A new model of this reading disorder emphasizes defects in the language-processing rather than the visual system. It explains why some very smart people have trouble learning to read." It is interesting that the author, Sally Shaywitz, is at the Yale Center for the Study of Learning and Attention, the same campus from which the Gesell Institute was spawned.

Under a section called *The Myths of Dyslexia* she states: "Myth: Eye training is a treatment for dyslexia. More than two decades of research have shown that dyslexia reflects a linguistic deficit. There is no evidence that eye training alleviates the disorder."

In the body of the article she states, "Early explanations of dyslexia, put forth in the 1920's, held that defects in the visual system were to blame for the reversals of letter and words thought to typify dyslexic reading. Eye training was often prescribed to overcome these alleged visual defects. Subsequent research has shown, however, that children with dyslexia are not unusually prone to reversing letters or words and that the cognitive deficit responsible for the disorder is related to the language system."