

BABO NEWS

Newsletter of the

Baltimore Academy for Behavioral Optometry

Volume V, Issue 1

February 2002

Questions and Answers

Q1. A question came in regarding just how to use the time frame on the VT grids vs. mastery of a procedure. Here are some answers from the BABO instructors.

Response from Bob Hohendorf:

I think the two extremes are "mastery" and "it's only on the grid for 3 weeks". Reality usually lies some place in the middle. Does the patient have the idea or purpose of the therapy procedure? Can they verbalize and demonstrate their skill? These are the questions I use to determine if they are ready to move on.

One option you have is to utilize home activities to help the patient finish until the necessary "goals" have been achieved. Goals are not the same as mastery. Complete mastery of an individual procedure is not critical to the patient's goals. How much can you reasonably expect from each procedure considering where this person started? The idea is to adjust the "burner settings" so that the patient has the necessary and meaningful experiences such that they acquire the visual skills they need to move forward.

The key issue is: Are we at a point where we can move on and use the skill? For example, if you have a strabismic in VT 2 and they have trouble with See Three Coins, it may be possible to move from a less-than-perfect See Three Coins to beginning Overlap Pictures.

Twice through the grid may be necessary for some. I try to get as much as I feel I can reasonably get out of the procedures from each patient. If after exhausting all strategies and burner settings, it is time to move on.

Response from Paul Harris:

Well written. (in response to Bob's answer) I was going to go into the Law of Diminishing Returns as we do in the course. I use the number of weeks on the grid as a minimum. Even if someone is good at something then I'll do it for 3 weeks if it is on the grid for 3 weeks and just turn up the burner settings.

Let's take some time to clarify how to use the grids. The grids are to be used as general guidelines and are not to be taken literally. In general, when an activity appears in one of the grids for a number of weeks, say 4 weeks, that should be used as the minimum number of weeks

that the patient should stay on that task. If someone is doing well with the activity, it is usually not difficult to find a way to increase the burner settings to provide that patient with the opportunity to have a very meaningful experience from which they can gain higher levels of refinement in the area addressed by that particular activity. On the other hand, in the case of a patient who starts at a relatively low level in the activity; who requires lower level burner settings the question is how long do I stay with the activity. The answer is embedded in understanding the "law of diminishing returns" as covered in the VT1 course. The law states that at the beginning of working with a new skill or ability for small investments of effort and energy one gets back a large return for that investment. As the performance or mastery level increases, it become more and more difficult to get the same level of change for similar degrees of investment of effort and energy. When plotted as a curve, the curve begins to flatten out over time. The therapist needs to make a judgment in terms of where the patient is on the curve. If the feeling is that the patient is still on the fast upward shifting part of the curve, then they should continue to work on the activity even if the grid says to move on to the next activity. The patient should stay with that activity as long as they are making big gains in their level of mastery and skill/ability acquisition.

Response from Gary Etting:

It appears that the message was not fully understood. Having the concept and a virtuoso performance are not the same thing. Stopping an activity before a patient has mastered the concept will cause difficulties further down the grid. While the grid is the recipe, the finest results will require different times and temperatures for different patients. Sometimes a second pass through the course material will help refine and further develop the doctor's and the therapist's skills in this subtle, yet key area.

[We encourage anyone who has completed a course who wants more experience with the material to audit that course. The fee is \$495, on a space available basis. If you would like to audit a course you have already taken, just call Theresa and she can let you know if there is space available.]

Q2. We are planning on knocking out a couple of walls in our therapy area to make a more open, large therapy room rather than several small cubicles. Some of my therapists, and a few patients, are concerned about having all the patients in the same area. I gave them the reasoning about wanting more visual space as well as teaching the patients to interact with visual as well as auditory noise. It would be helpful to have an opinion on which is better, large open spaces or cubicles.

Response from Paul Harris:

Interesting question. In general it is best to have large open spaces that can be used flexibly. However, it can be important to be able to move away from the "hub-bub" of all the activity of others to help decrease background noise.

I see the ideal set up for VT as:

A. Having a main large VT room with wide-open spaces. This should be as big as you can afford to allow for walking rail activities with a huge area to throw the ball in large open circles. Think of "walk through hanging balls" and having three balls in a row which can be thrown in circles and not hit each other and still have room for the walking rail along the same line but outside of the main line for the three balls! In this space separate work areas would be set up on counter tops, which jut out from the wall, which allow the patient to be on the opposite side

from the therapist. Having 3-4 or more of these in the large open space but still having the wide open space in the middle, not blocked off by the counter tops, is ideal.

B. A dark projection room where light can be controlled (turned off) and not have it bother the others. This room is used for CP Saccades, Flashlight Pointing, Projected Vectograms, Computer Orthopter, etc.

C. Another room with a single counter top in a relatively small, uncluttered space for working with a child who cannot handle the big open space.

Having all 3 sites allows the best ability to adjust to the needs of the patient.

Consultation Corner

In the July Newsletter we had a case about a 10-year-old male patient. Below the case is reprinted for your convenience followed by the responses:

Patient: Third grade 10-year-old male.

History: Diplopia at near, rubs eyes, eyes hurt, blinks excessively (and forcefully)

Current Medications: Adderol

Last visual exam: Two years ago

Medical: Eyes, family and current health negative for problems

Academic History: Likes to read, (but loses place) dislikes spelling

Findings: Visual Acuity: 20/25 - 2 OD, OS; unaided at far, 0.37m OD; OS at near (read slow skipped letters)

Cover: 15 P.D. Right exotropia at far

10 P.D. Right exotropia at near (occasional aligned appearance)

Motilities: Fair accuracy, mild head movement, no body movement, without limitations

Worth 4 dot: Far 5 Near 4 +/- 2.00: with +2 got 3, with -2 got 4 (repeatable)

Stereopsis: 0/10

Color: 7/8 OD& OS

Stress Point: +1.50

Ocular Health: Within Normal Limits

Retinoscopy (#4): - 0.25 OU Refraction OD -50, 20/25 OS pl 20/20

Phorias at far (#3) 12 exo (#8) 12 exo

Plano Control-equilibrium BO (#9#10) 24BO "it's moving" – no diplopia BI (#11) X/24/8

Fused cross cylinder at near (#14B) +0.75

Phoria through above: (#15B) 16 exo

Equilibrium: (through +0.75)(BO) (#16) 14BO it's moving – no diplopia (BI) (#17)

X/34/16

Positive Relative Accommodation (#20) -0.25

Negative Relative Accommodation (#21) +1.50

Vertical Phorias: Far (#12) 2 Base Down OS

Near (#18) 2 Base Down OS

Poor response consistency for all phoropter testing

Responses:

Thanks to Eva Strube, O.D. for her response. "The third grader in the July Newsletter needs vision therapy not question, but a pair of plano lenses with the Liberman's lines on them might assist him to use peripheral data to create a single, binocular view. Using -2.00 lenses to force

his system to alignment of the exotropia would only be temporarily useful and could trigger further maladaptations. That's a tough one."

Response from Paul Harris:

This case is a tough one, which combines many things. This boy is an exotrope most of the time at all distances. Much is missing from the history. He has symptoms that go along with the binocular problems but he is also on Adderol presumably for an attention problem that often accompanies a learning problem. All we have is that he dislikes spelling but nothing really about there being performance problems in school. Generally a child that has learning problems tends to avoid near-centered tasks. This would normally not be associated with asthenopia, which was given as part of the history. So we are almost forced back to the thought that he is still actively trying to perform educationally and in spite of his binocular problems is persisting at the near centered visual activities. It is no wonder that this boy is losing his place while reading with the head movement being present on the motility testing and with the possibly intermittent exotropia at near (it tested constant but the clinician wrote that he occasionally looked straight at near). This may be the rare instance of a child still very much in "fight" working to persist at trying to perform in school in spite of his visual difficulties.

Now on to the real question of lenses for this boy; the first thing that jumps into mind is that this is not a lens case and is absolutely going to require vision therapy to resolve. One question is which type of VT? Based on the BABO curriculum concepts which curriculum is best? Do we begin with VT-3 and work to first resolve the exotropia and then switch over to VT-2 once the binocular issues have been dealt with in order to help him get to the stage of reading to learn? Or, do we begin with VT-2 and assume that based on the intermittent nature of the turn that if by the time we hit the higher level binocular demands that we go "off-grid" and bring in some early VT-3 things to address this if these areas don't fall in place as we go through the VT-2 grid? To me the key would be to revisit the potential intermittency at near. If it really is intermittent in nature I would begin with VT-2. If it is constant then I would begin with the VT-3 curriculum and be prepared to jump to the VT-2 grid as soon as the exotropia resolves. Stated another way, let's get this boy up to the point of being a consistent binocular interactor or a binocular integrator and then let's deal with whatever performance holes are left.

ASIDE: the consistent finding of 2 base down OS on the vertical testing at distance and near will be addressed by either direction of therapy. I view the vertical as a very minor secondary side effect of the basic binocular problem and don't see that any direct attention will need to be put on this small vertical problem. As a result of establishing better binocularity this will be taken care of.

All right you say, you've avoided the lens issue long enough. What Rx are you going to give? Initially I would give a Plano distance lens with +0.75 for near in a bifocal form. Dr. Srube's idea of giving a lens with some peripheral markings to provide this boy with some visual framework to increase visual awareness to trigger a binocular response has some merit. However, my experience is that this type of treatment is more effective towards the end of a comprehensive treatment program and may not move us anywhere without the training necessary to help him know how to use the markings.

What about yoked prisms? We have no data about how he responds to these but I would certainly look at several performance types of activities with yoked prisms in all four primary directions to see if there is a change in performance. In this instance I might consider giving a "compensatory" yoked prism, meaning the one that improves performance just to get him to a point where we could institute VT-2. Then as the VT progresses I would lessen and then

remove the prism as he takes more responsibility for seeing with both eyes in a more coordinated manner.

Response from Bob Hohendorf:

The compensatory lens was no Rx; the prognosis was more of the same. Possible OD suppression/amblyopia. It could also be the MD special -1.00 OU. (Many would rely on the accommodative convergence ratio to reduce the exophoria. This would be given from a mechanical model of vision, which relies heavily on AC/A concepts. It generally gives only a temporary, if any, effect at all and the patient usually stops wearing the glasses on their own if myopia has not created a dependency on the minus lenses.)

I recommended the use of a plano lens for distance combined with + 0.75 add as a lens treatment alternative. This lens may serve as a stress-relieving lens and therefore help to prevent the development of myopia. This type of lens may or may not affect the phoria/tropia measures. I think the effect will be more positive to neutral. By reducing the demands on the visual process at near with the lens we provide the patient with the opportunity to organize their use of the lighted space-world in a more "normal" pattern. I also believe this must be provided in bifocal form for this patient. Plus at far and near may drive the exophoria/tropia and blur far visual acuity, both of which would be negative. Single vision lenses should not be used with this patient. I chose +0.75 because of the positive response on the Worth 4 dot at near with plus and the stress point retinoscopy results. The +0.75 amount is a conservative amount that can be used (stress point, NRA) and yet enough to still have a chance to have a positive impact on the exophoria/tropia. Too much plus will be destructive and there is a chance better that by improving identification or target "rapport" that the exo posture may be decreased.

VT + lens treatment alternative: This is obviously the treatment of choice to develop fusion and reduce asthenopia. Lenses alone will not get rid of all the symptoms in the history.

The patient has the right to choose any of the above alternatives. For the patient to make an informed choice they must be given information about all the alternatives. Without this information they cannot make the decision that is best for them. Finances and time commitments must also be discussed for each option to allow the patient access to all the factors that may affect treatment choices.

Book Review

By: Paul A. Harris, O.D.

Furr, David L., **Reading Clinic – A New Way to Teach Reading – Brain Research Applied to Reading**, Truman House Publishing, Chicago, 2000, ISBN 0-9700324-0-4.

A gentleman involved in Tomatis auditory work and Neuro-Feedback training loaned me a copy of this book. This little paperback (quite expensive at \$39.95) talks about a method of training reading based on the Neural Impress Method (NIM) which was devised after World War II to help soldiers who had been head injured recover their reading abilities. The author mentions several times that the basis and concepts for his adaptation of the NIM run contrary to the current education trends (i.e. the back to phonics method of teaching). From my perspective, Furr makes tremendous sense.

He talks about how children with reading difficulties are often put in positions where they are asked to “guess” the word in front of them based on context clues and maybe the beginning letter or overall length of the grapheme on the page. He states that what may happen here is that incorrect associations in the neural architecture are made this way between the grapheme and the incorrect phoneme/lexeme (sound name).

Furr talks about the process of “pruning” in the brain, whereby experiences that are not critical to be remembered are in essence dumped from memory. This is a variation of the Hebbian concept of how synapses work, which is related to the “use it or lose it” concept. Hebb showed that if a pathway is used in the brain, that pathway is made stronger, allowing for future signals to flow along that pathway more easily. Thus, if one guesses “his” for “this” enough times, the association of the wrong “name” for “this” becomes stronger over time. Hebb also showed that if negative associations are simply not used or conjured up any more, the pathway becomes weaker, making it harder over time for that pathway to fire. This is a variation of the extinguish phenomena from the principles of behavior modification--ignore the negative behavior and over time it will go away. Furr explains that:

“We prevent the student from forming incorrect neural networks by giving them the pronunciation of the word. We prevent more incorrect connections from forming and we reduce the reinforcement of the previously constructed (bad) networks. By telling the student the correct word before they guess a wrong word, and thus creating another bad pathway, we help build bigger correct pathways and speed the pruning of the incorrect paths.” (Page 20)

NIM is based on two strategies: the first, to stop guessing and avoid phonics in the beginning, and the second, to practice enthusiastic and energetic reading. The concept is to impress (we could almost substitute embed or imprint) the correct way of reading onto the reader who has yet to master the process.

The method involves two people, a good reader acting as the model and imprinter, and the student, whose neural networks are to be trained by repetition and exposure to the printed page, the graphemes on the page and their associated lexemes or names. As Furr states, “modeling, repetition and attitude are the keys to Neuro-Reading.” (Page 43)

Many of us have had parents ask us about comprehension. We often work wonders with the mechanics of the reading process; decreasing the number of fixations and regressions and decreasing the average duration of fixation, which brings up reading speed. For most of our VT patients, reading comprehension and reading level increase with reading speed. Furr concurs, explaining that “we believe that comprehension is a function of reading fluency. At the end of our program when reading speed is emphasized comprehension goes up dramatically. We have never really had to teach comprehension per se to our students. Every one of them have learned comprehension with no effort that we could observe.” (Page 74)

The book includes tests to help determine the correct reading level at which to start. It also includes a recommended series of books to work through for each level. These do not have pictures and are simply text at graded levels which use the and repeat the words the children need to learn.

Here are a few tidbits from the book that I found interesting. They were not referenced precisely, which would have been nice:

- “A recent study has shown that students in classrooms where there is more natural light progress up to 25% faster on standardized tests than students in classrooms without natural light.” (Page 22)
- “In one study, children who drank a glass of juice before each lesson or test in a particular subject did 33% better than a control group.” (Page 24)
- “Optimal room temperature for the brain is 65 degree Fahrenheit (18 Celsius). Recent studies show that an increase in temperature of 10 degrees decreases optimal brain function by 15%.” (Page 26)
- “Stress is an interesting phenomenon. The person experiencing the stress solely determines its definition.” (Page 30)
- “We have found that 100 percent of children who are experiencing reading problems are also under a lot of stress. Their stress is often directly related to reading. Their parents or teachers activate the stress simply by asking them to read.” (Page 30)
- He makes the point that many people who are good readers do not know the rules of phonics very well. In a related way I saw this when I was in Denmark. A Dane, learning English would ask me for the rule for when you do this or that and I said, “I don’t have any idea I just know it.” In fact, for some of these things I didn’t even know there was a rule! He states, “91% of the people who have taken an elementary phonics test on our web site, and identified themselves as elementary school teachers, failed the test.” (Page 70). Want to try the test yourself? Go to: www.neuro.read.net/Form3.html
- “Only 3% of our students have needed more than 10 lessons.” (Page 55)
- Lastly, a comment on the frequency of practice. This is consistent with the information from the Avi Karni article I have reported on earlier. “Homework is important. If the material is presented and reviewed later the brain will retain much more material. We strongly recommend that you do these lessons six days a week. Seven days is okay, if you must, five is okay. If you cannot do this five days a week, you are wasting your time.” (Page 75)

Mind Candy

I have been interested and involved in a number of the exchanges taking place on the University of Indiana VT list service (VTOD-L@LISTSERVE.INDIANA.EDU). A number of different perspectives on vision, its treatment, and diagnosis have popped up during the dialogue there.

I would like to share with you a couple of the approaches that have been offered in answer to some questions raised. It seems that there are a number of folks who look at the parts of a visual process or at a specific product of the visual process and design treatment based on that analysis. For example, if the DEM score is low, then train eye movements. If a patient has a receded near point of convergence, then do pencil pushups. When prescribing glasses based on this approach the OD usually sticks closer to prescribing the actual refractive finding. This approach is usually direct, right to the point, and will often produce results.

There are folks who look at the process of vision and prescribe to help meet the patient’s unmet needs. These folks are asking how did this come to be and what can be done about what is found? They see the “flaws” in the visual process as leading to the reduced abilities rather than seeing the reduced abilities as the problem. The therapies they prescribe tend to be more in depth and longer in duration. *What is leading to the reduced ability to direct movement? Why did this person need to develop that anisometropia, astigmatia, eye turn, etc. What problem does this solve that lead to a visual adaptation?* These folks tend to prescribe lenses and therapies designed to change the current visual situation to reduce the need for further mal-adaptation or

to support a current visual condition when the person is found to be in balance and functioning well.

In short, there are optometrists who are looking at the outcome of examination and testing and prescribing to directly work with what they see as a deficient result. There are others who see what others might call a deficient result a symptom and are seeking to treat the underlying causes when possible. Most of these folks from both groups use the same terms and want the best for their patients. Many of the first group would say that their approach was more efficacious than those in the second group. Those in the second group might say they went into greater depth.

A true physician works to free the patient from the effects of disease. This generally involves looking beyond the surface symptoms and looking at the entire process.

I'd like to encourage you to engage in active dialogue with others in our field. One way would be to become part of the Listserve as well as attending meetings and joining or forming a study group. Cherish another's viewpoint. Share your successes and failures. The challenge of explaining leads to greater understanding.