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Case Consultation Corner

By: Rob Lewis, O.D.

I recently saw a patient (I am going to call him Mike) who was six weeks past a stroke affecting the cerebellum near the optic nuclei. Mike is 56 years old. He is relatively young appearing, articulate, and strong, having lived an active life to this point. He is now having difficulties with balance, mobility, and vision.

He was sent to our office from his home in rural Arizona due to double vision. The habitual was lost.
Mikes eyes and adnexia were healthy in appearance with the exception of small dot hemorrhages visible with direct ophthalmoscopy in both retinas. This is consistent with his history of vascular and circulatory difficulties—the retina shares circulation with the rest of the brain.

Mike needs a walker or other support in order to walk. His left side movement is slightly more affected than his right so he loses balance without the support of a walker.

Mikes eye movements were reasonably well controlled, especially for a patient with a history of stroke. Each eye is able to move over the full range of expected movements, but with less skill than expected in the general population.

Cover test disclosed a vertical imbalance with single vision from 3 to 5 prism diopters. BD in front of the left eye provided very much improved balance compared to the same amount of BU in front of the right. We also know he had worn a progressive and had no vertical before so there was no history of vertical in the past.

Distance refraction for best visual acuity was:
-0.75-0.50 X 85 20/25 3 esophoria at distance
-0.75-0.50 X 75 20/25 6 exophoria at near with a +1.75 reading addition
Minimum plus at near was a +1.75 add.
The initial pair of gasses designed for Mike was:
-0.75-0.50 X 85 1 BU
-0.75-0.50 X 80 3 BD +2.00 Add O.U.

Why did we prescribe the cylinder? While ordinarily small amounts of cylinder need not be prescribed, in this case the cylinder was important to his comfort and best possible acuity. The cylinder prescription was modified slightly towards symmetry as this tends to produce more symmetrical organization and balance as the person adapts and develops through the lenses.

The amount of vertical prism prescribed was the midpoint of his range of single vision. More was prescribed BD due to the improvement in postural symmetry and balance. By putting 3 BD?in front of the left eye we get an overall BD? effect that helped improve Mike's posture and balance and we can remove the 1 BU as Mike gains function to drop the amount of prism to 3 BD? OS only.

A point of interest was that Mike has worn a progressive lens for near work in the past. Mike wanted to continue to use progressive bifocals. Progressive bifocals are not ideal, but as he is used to the way they work, the additional BD in the lens may help stabilize his posture. It is worth a try.

In an effort to be kind, and to save travel time our staff mailed the glasses to Mike. Mike returned to our office with concerns about his glasses about 1 week after they were mailed to him. Mike is a stroke patient who needs careful support with his new therapeutic lenses which have both a significant vertical and a significant BU component. Mike should have had a dispensing appointment so that his glasses were well fit to his face, he could have been given proper instruction, and so his questions could have been dealt with at the time.

Now that he has had his initial exam and a second visit, he knows how to use his glasses and what to expect from them. Mike is at home learning how to use his new glasses and working on beginning movement activities designed to help him relearn the symmetrical use of his lower body.

What I hope to bring out in this case report is the careful use of lens design to achieve the most symmetrical visual and physical posture possible so Mike has the best opportunity to redevelop mobility and self reliance following his injury. His lenses were designed to be changed in the future to support him as he regains his visual health. Secondarily, Mike, and most other brain injury patients need to be taught how to use their new glasses to achieve the maximum success possible.

Listening Therapies – A Summary

By: Robert A. Hohendorf, O.D.

The first listening therapies were invented by Dr Tomatis in France. He worked with opera singers. (In a similar vein, FM Alexander worked with orators and the physical act of voice production.) Tomatis found that rather than the loss of their voices coming first he discovered that they were first losing their hearing and that this was causing them to alter how they used their voices, which in turn led to them losing or damaging their voice. He found that it was important to have a strong link between the dominant right ear and the left language hemisphere. Three to eight percent of the population is thought to have the right hemisphere be their language hemisphere. In these people the pattern may be reversed. Tomatis therapy is thought to work primarily on listening.

It is a long and quite expensive process to go through. There are qualified trainers throughout the country. Tomatis uses mostly Mozart and Gregorian chant music, and mother's voice. Some forms of Tomatis can be supplied on CD's.

The second development came from a student of Tomatis by the last name of Berrard. It is known as Auditory Integration Therapy (AIT). Berard noticed that there was a hypersensitivity of hearing at certain peak frequencies. He uses audiogram testing to look for these hyper-sensitivities. He finds primary and secondary pairs of frequencies. He uses a more diversified selection of music and passes it through what he calls his ear-ducator filter system to produce a wide range of frequencies. Frequencies can also be filtered depending upon on the audiogram results of the individual. They increase surrounding frequencies to decrease hyper sensitive peaks.

The music (1980's pop and rock) is pre-recorded and pre-prepared and chosen for certain frequencies. It uses a more randomized stimulation than Tomatis's CD's. The randomization seems to not allow anyone to pick out patterns in the modulation of the music. It is an intense ten days, with two separate 30-minute treatment sessions per day during the program.

The OT here likes it for a wide variety of patients. She feels it can benefit almost anyone. She likes the low frequencies for vestibular problem patients and for improving receptive language. She states she can almost guarantee improved fine and gross motor skills with the low frequencies in the CD's.

She also finds it good for those with a history or ongoing nutritional and environmental disruptions in development. Patients with central auditory processing (CAP) disorders especially benefit from this therapy as well. She refers to it as helping with auditory processing and explains auditory processing as what we would call auditory figure-ground perception. It seems to also help with rhythm, timing, and auditory spatial organization as the auditory processing (figure/ground) improves.

This is also very good for speech and language problem patients; Particularly those who have a hard time hearing certain consonants and blend sounds in language. This would lead to problems in speech and in reading as well. Berard also really pushes the dominant right ear concept to the point of feeling the need to attempt to change ear dominance.

I experienced some AIT and it was pretty intense. Patients usually need a 30-minute cool down period after their 30-minute session. The OT's here use it along with vestibular, sensory integration (SI) or DIR (Developmental, Individual Differences, Relationship based) activities. DIR was developed by Dr Stanley Greenspan (www.floortime.org).

The next "listening" therapy to emerge was Somonas. This was started by a Berrard student by the name of Steinbeck. He is a German sound physicist and is quite technical in what he does with the music. He uses an Envelope shaped modulator that is difficult to understand by a non-physicist.

You can really fine tune the auditory process with these prerecorded CD's. There are four levels of recordings. The first is music. By that I mean music without any alteration. Some types, mainly classical music of the early Classical period of the Mozart era with nature sounds added are easy to listen to. The last level is called ST. I only know it as ST. I am researching what it stands for now. What I do know is it is a high frequency enhanced program. High frequency sounds are especially critical for understanding speech.

This is a short duration, or can be used as a sensory diet for a home based program. This therapy choice has a lot of variety to the music used on the CD's. This is the primary therapy that produced the best results for me in hearing people clearly in a crowded auditory situation, such as a room full of people all talking at the same time. We also use this in combination with Syntonics for amblyopes and some autistic spectrum patient's whose active participation with therapy is difficult.

The next development was by United States based Sheila Frick an OTR. She is a major mentor of the OT with whom I work. She has combined the three therapies above into a home-based program. The modulation changes were specific and not randomized. Our OT likes to use these for fine tuning the auditory process.

The OT here at the Vision and Sensory Center (VSC) likes to use this method as a home follow up to Berard's AIT. She does start some patients at this level and seems to be very effective for those patients needing auditory figure-ground, postural-support, motor planning, speech and language work. These CD's also seem good for cases with mild tactile defensiveness, mild emotional problems or mild auditory sensitivities.

The newest therapies developed by Dorinne Davis also use all the varieties of therapies above along with the Interactive Metronome, Earobics, and Fast Forward Series. She has organized them into what she calls a tree of sound. That is the basis for her Diagnostic Evaluation for Therapy Protocol (DETP(R)) which determines when, if, how long, and in what order sound based therapies can be appropriate for each individual. http://www.thedaviscenter.com. Her book is titled, "Sound Bodies Through Sound Therapy". She is based in Rockaway, New Jersey.

The VSC OT has has reported improvements with bowel and bladder control problems, sleep problems, eating disorder problems and expressive language problems accompanying these typesl of therapies.

Additional References: www.aitinstitute.org. http://www.aitresources.com/history.cfm