

Articles | From Skeptic to Convert, the Objective Way

EDITOR'S NOTE:

The following article appeared in the Winter 2002 issue of the British magazine, *Speech & Language Therapy in Practice*. Dilys Treharne is a speech and language therapist teaching developmental disorders at the Department of Human Communication, University of Sheffield in Sheffield, United Kingdom. In addition Dilys does research on central auditory processing disorders.

SPEECH & LANGUAGE THERAPY IN PRACTICE

From Skeptic to Convert, the Objective Way

By Dilys Treharne

Results from her research were so encouraging that Dilys Treharne now uses The Listening Program as the first step for young people with auditory processing difficulties, 'priming the system' for more specific therapy programmes.

I work with children and young people with auditory processing difficulties. Usually between 6 and 17 years of age when referred, they are underachieving or complain of not being able to hear properly in school but on pure tone testing have no significant hearing loss. Some have had a dyslexia assessment but only show a borderline pattern. Others have had a significant amount of speech and language therapy focusing primarily on phonology and comprehension with some expressive work, and have made limited progress. Many have a history of poor attention and in some cases have had a diagnosis of attention deficit disorder or mild autism. Referrals come from audiology departments, speech and language therapists, teachers and parents.

After an in-depth assessment a pattern of difficulty emerges with selective attention or auditory figure-ground tasks (hearing speech in background noise which most people are not aware of, such as the hiss of a gas fire or a clock ticking), maintaining attention, auditory sequential memory, sequencing, dichotic listening tasks, temporal pattern processing, pitch perception, processing language at normal speed, motor coordination, and motor coordination with speaking. Not all the children have all the problems. Some have a clear auditory processing disorder and some will be borderline or at the lower end of the normal range. However, if they are having problems functioning in the classroom they are offered a programme of therapy.

Initially I used Earobics to improve listening skills, together with tasks tailored to the individual to teach tolerance of background noise, auditory memory, and phonological awareness. I used the relative visual strength to support comprehension of read and spoken sequences through visualizing and verbalizing. 'Brain Gym' style activities (see Dennison & Dennison, 1989) were used to improve coordination and concentration. Progress was slow and used a great deal of clinical time.

WORTH A TRY

I was then introduced to The Listening Program (Advanced Brain, 1999), a type of sound therapy programme built upon the work of Tomatis. It was different in that it was home-based and required the relatively short two fifteen-minute periods each day for five days a week over eight weeks. I was objectively skeptical, but anything was worth a try, and it came with good reports.

I evaluated it with a limited number of children, selecting the prime problem areas for assessment (Treharne, 2001). In this first cohort were 10 children between the ages of 8 and 16 years with non-verbal intelligence scores ranging from the 3rd to the 95th centile. They all had problems with auditory figure-ground and most with auditory sequential memory and attention. Temporal pattern perception, phonological awareness, reading and spelling were also common problems but at a higher stage of processing. Baseline assessments were repeated on the prime areas of auditory figure-ground using the Goldman Fristoe Woodcock (1976) Auditory Skills Selective Attention test, and auditory sequential memory using Gardner's (1996) Test of Auditory Perceptual Skills (TAPS-R). Temporal pattern perception was tested using my own TraCol (in preparation). Children who had made no progress over the previous eight weeks were selected.

The Listening Program is contained on eight CDs, one for each week. Each contains 12 tracks, three to be used at a 15 minute listening period of which there are two each day. The music is classical, specially recorded and then acoustically treated by filtering out certain frequencies (this varies from track to track and increases as you move through the programme.) Nature sounds are added and the whole is presented dichotically. This has the effect of the sound appearing to move around the room and to be near or distant.

I purchased the CDs but ask parents to provide the CD player and high quality headphones if possible. The children's pleased expressions at being expected to sit down and listen to CDs twice a day fade a little when told it is based on classical music. Some have grown to like it while others still only like the "duck bits."

I discuss the listening diary by telephone and the parents collect and return CDs to the clinic each week, so several children can work with a single set. I am also able to lend a full or half set for eight or four weeks to children who live further away.

BEYOND EXPECTATIONS

In the evaluation study the children were reassessed at the end of the programme and then left for eight weeks before being reassessed once more. The results were beyond my expectations: all showed an improvement greater than one would expect from maturation.

The pattern of change was interesting. Parents noticed an improvement in general attention and attention to sounds within three weeks. All reported a greater responsiveness to conversation. One child who did not initiate conversation even at home began offering opinions and became quite a chatterbox; another noticed the church bells for the first time in his eight years. Awareness of sound and attention span had not been assessed in the pre-trial period so I was unable to objectively measure the amount of improvement in these areas. In the sixth or seventh week of the programme many children exhibited a deterioration in behaviour, becoming disagreeable or aggressive. Fortunately this lasted only a few days to a week, and settled as they moved on to the next CD. This occurred at a point where the gating (acoustic modification) is markedly increased and I believe this, together with the child's increased sensitivity to sounds in the environment, was the cause and a sign that the programme was being effective.

The greatest change was in selective attention (auditory figure-ground). All made an appreciable improvement and the overall change for the group was significant. Those with the severest difficulties made the greatest improvement. In some this change was dramatic moving from below the first centile to the 7th, 9th and one case 16th centile in just eight weeks. Remember, these children's scores had remained static for the previous eight weeks.

Many also showed change in auditory memory but perhaps this was due to their improved attention levels. The measured changes were small immediately after the programme and in many cases the greatest change occurred within two months after completion.

These improvements were good in themselves but more importantly they were maintained and opened the door for other activities such as Earobics to become effective. Progress did not stop after two months, and even those without direct intervention continued to make gains. The length of this extended progress period varied. When progress stopped or a slight regression was noticed the child took another course of The Listening Program. Progress was also evident in fields not directly targeted. Joe, who had been very slow to make any progress in speech and language and at eight years was still almost unintelligible with really low self-esteem, became much more relaxed and confident and, two thirds of the way through the second course, his phonological system had improved dramatically without further intervention.

We have also tried The Listening Program with students who were finding lectures difficult to follow and some have noticed a change. The results are being analyzed.

Originally designed as a home programme, it can also be used in school. Four children have completed it at two schools with a special needs classroom assistant. The children listen in a group while the assistant does paperwork. They discuss what they have heard and the listening record is written up. The schools are amazed at the results and consider it time well spent.

The effect of The Listening Program has prompted me to explore other sound therapy techniques – such as the Sound Health CDs, also from Advanced Brain – to support and maintain attention and concentration levels after the programme at home and in schools.

The Listening Program is now my first step in auditory training as it seems to activate listening skills that have been repressed or never developed, thus priming the system for more specifically targeted therapy programmes.

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RESOURCES

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