

# A four year implementation project in Minneapolis, USA

The four studies presented here seem to support the view that subtle hearing problems can present themselves as (or develop into) Auditory Processing Difficulties and cause severe language problems – but first of all that: we can do something about it!

(previously known as Hemisphere Specific Auditory Stimulation – HSAS) should read (previously known in the USA as Hemisphere Specific Auditory Stimulation – HSAS)

A Chance to Grow's New Visions School in Minneapolis, MN, USA has used Johansen IAS (previously known as Hemisphere Specific Auditory Stimulation – HSAS) as part of the staff's commitment to support remedial education for children with language problems since the academic year 1996/1997.

## Year 1

During the school year 1996/97 a pilot project with 10 students was initiated. Only 7 of these completed the program. The pilot project showed that all 7 demonstrated **gains in hearing level as well as right ear preference**. It also demonstrated that there was a **significant increase with all students for processing**, with the exception of 2 students who both had neurological diagnoses.

After 10 hours of listening the **teachers and parents reported gains in the classroom and at home in language, academics and social skills** (New Visions School Minneapolis MN, 1996-97. Third Year Charter School Summary Results pg. 61-70).

## Year 2

During the academic year 1997/98 the project was extended to involve 90 students of whom 68 completed the program.

The goal of the initial and final testing was to **determine which areas of auditory processing would be most affected by specific auditory stimulation**. A series of standardized tests, as well as a questionnaire to be filled out by the teachers and parents, were selected to address the most common behaviours observed in individuals with auditory processing difficulties.

These included, but were not limited to, difficulty listening in various environments, "tuning out", frequently asking "what" or saying "huh", misunderstanding what was said (confusing sounds), difficulty following directions, poor memory and attention, immaturity, as well as poor self-image.

The overall conclusion that the school was able to draw from this year's work with specific auditory stimulation and based on standardized testing (SCAN, TAPS, TOPL) was that the **most significant gains that were shown included:**

- Increased ability in understanding information in different environments
- Increased auditory word discrimination
- Increased sentence memory
- Improved thinking and reasoning skills.
- Gains in social language and behaviours often seen with students that demonstrate problems with auditory processing.

**The final conclusion** was that the specific auditory stimulation program (Johansen IAS) does **positively change auditory processing skills in many areas** and the more time spent listening to the tapes the better the auditory processing skills, which can only lead to better academic skills (A Chance To Grow. Summary of Results for New Visions School 1997/1999 pg. 56-77).

### Year 3

During the academic year 1998/99 the program was initially implemented with 138 students aged 5 to 18 years in 10 different institutions in and around Minneapolis. One institution and a total of 36 students did not complete the program.

Based on questionnaires and standardized testing (SCAN, TAPS, TOPL, TOVA) the overall results of this years project show that Johansen IAS can be replicated at different facilities with measurable gains.

#### **The areas in this study that show significant gains include:**

- The use of the right ear for speech frequencies
- Auditory discrimination
- Auditory sentence memory
- Understanding distorted or unclear information
- Understanding verbal information with background noise
- Understanding competing verbal information in both ears
- Improvements in attention and behaviour, which is consistent with previous studies.

These results were **supported by general comments received from each institution** about the program and specific students that had been listening to the **Johansen IAS** tapes.

Some institutions reported **positive developments in students that had characteristics of autism and PDD**. These students became **more talkative and inquisitive**. One student was able to understand and utilize figurative language by the end of the school year, which the staff credited to the specific auditory stimulation.

It is difficult to know which students will benefit the most from the auditory stimulation program, but in this project the **staff at 8 of the 9 participating facilities were willing to continue the program with other students based on the observed changes in the students**. But controlled studies are needed to evaluate the effect of the specific auditory stimulation programs in larger settings. This work is ongoing (A Chance To Grow. New Visions School. Hemisphere Specific Auditory Stimulation. A Summary of the 1998/1999 School year).

### Year 4

In the 1999-2000 school year the SPLAT Department has implemented the specific auditory stimulation program (**Johansen IAS**) with 65 students at New Visions School. There were 58 new evaluations for the **Johansen IAS** program with 38 students fully completing it. 27 students on a maintenance program and seven control students. The students on the program were divided into 6 groups according to age, academic level and for administrative reasons.

To evaluate the students' progress the following tests were used: SCAN C/ SCAN-A, TAPS-R, Slosson Oral Reading Test-Revised (SORT-R) and the Gates-MacGinitie reading test.

#### **The results from the SCAN C/ SCAN A supports the belief that Johansen IAS aids in:**

- Increasing listening abilities in different environments which would include classrooms, gymnasiums, restaurants, homes and places with numerous activities and noise present.

Overall results revealed mild gain for all groups. **The group with most listening time (> 12 hours) demonstrated moderate to significant gains.**

The results from the **TAPS-R** revealed **mild gains for the majority of groups and moderate gains for the group who did the most listening.**

The students on the Johansen IAS program made an **average gain in the reading measurements on the SORT-R of 1.7 year. NVS students not on the program made a 1.2 year gain on the SORT-R.**

The NVS students who participated in the Johansen IAS program made an average gain of **1.5 years on the Gates-MacGinitie**, while the NVS students who did not participate in the Johansen IAS program made a **0.6 year gain** on the Gates-MacGinitie.

These numbers included students on the maintenance program. **Their increased number of listening hours, maturation, and development of higher level processing skills may have contributed to these large gains.**

(Hemisphere Specific Auditory Stimulation. A Chance To Grow/New Visions School. 1999-2000 School Year Report).

### **Final comments**

For more than half a century many special education teachers, clinicians, speech-language therapists, ENT-practitioners and others have experienced that language-impaired children often face reading problems in school.

In an attempt to help language-impaired children to develop their language properly, some of these people have independently developed tests and stimulation programs that for years were used based on positive outcomes but without generally accepted theories to back them or to explain what was going on. Names as A.A. Tomatis and G. Berard may be known to quite a few.

During the fifties and early sixties a Danish researcher Christian A. Volf developed a stimulation method based on the assumption that deficient auditory perception was at the root of many children's reading problems.

Dr. Volf focussed on three sound parameters: the spectral, the temporal and the amplitude of sound, and developed records with soundtracks to stimulate the auditory system in these areas. (Johansen, 1984).

Dr. Volf's method of stimulation has survived as a private business in Denmark and in Germany until now. This is not due to heavy advertising but mainly due to reported positive outcome. The method used in the projects reported above is inspired by Dr. Volf's method, but the use of modern techniques has made it possible to make individualized stimulation programs. The Programme is now known as Johansen Individualised Auditory Stimulation (Johansen IAS) worldwide.

Today we know that deficient auditory perception may cause more language problems including problems in reading and spelling.

We also know that the plasticity of the auditory system may make it possible successfully to utilize stimulation programs that just a decade ago seemed to resemble magic and with no acceptable explanation.

**The four studies presented here seem to support Dr. Volf's view that subtle hearing problems can present themselves as (or develop into) CAPD and cause severe language problems – but first of all that: we can do something about it!**

This does not mean that problems related to specific reading difficulties are not found in other perceptual areas. As shown in other research projects and documented by Sohlman (2000) such problems are certainly there. We need to do more research and to come up with more neuro-educational training programs to address these problems.