

## Auditory Processing Difficulties: A holistic approach for children and young adults with significant complex needs

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### Introduction

#### Auditory Processing Difficulties (APD)

APD has become a controversial topic worldwide, and it is difficult to seek diagnosis or intervention in the UK - even in a typically developing child. There are a limited number of diagnostic service providers across the UK, most of which have a referral criteria which does not accept referrals for children/young people with autism, speech and language disorders or learning difficulties. The stringent referral criteria may be dictated by a lack of suitable diagnostic tools that could be used for this population. In addition, many available diagnostic centres offer only private services - with financial implications for families.

There is limited evidence or research surrounding APD in children/young people with cognitive delay or neurological difficulties - with studies very often excluding participants with these conditions - fewer still focus on the complex needs population.

#### Seashell Trust

Seashell Trust is a national charity providing education, health and care for children and young people from 2 to 25 years old with complex learning and communication difficulties and/or disabilities including autism, deaf/blindness, multisensory impairments, hearing, visual impairment, complex physical disabilities and /or additional medical needs. All students have some degree of neurological problems. Seashell Trust operates Royal School Manchester, Royal College Manchester, Residential Homes, Health, Outreach & Family Services.

Taking into account the complexity of needs that the children and young people at Seashell present with, in our work we look to distinguish between an auditory processing delay and/or associated conditions. Given the rare conditions and varied presentations at Seashell, we are using a child-centred holistic approach when devising intervention programmes for each individual.

Students needs and requirements are assessed on entry and a team of therapists from various disciplines are assigned to that student in order to support them throughout their placement. This then becomes the individuals' multidisciplinary team.

There are just 2 out of 119 students at Seashell who have an APD diagnosis. However it does appear from staff reports that there are more students who are presenting with a delay in response to auditory stimulus, which may suggest that the true number of students presenting with APD is much higher. It is important to note that APD is not the result of the conditions, eg. ASD, ADHD, that may affect understanding or attention. Amongst a complex needs population it is difficult to distinguish between neurological problems and APD.

### Case Study

Student A is 11 years old and started at Royal School Manchester around aged 6. He is known to have a global developmental delay and has had observed presentations and diagnoses in both the UK and US of Autism Spectrum Condition (ASC), Auditory Processing Difficulties (APD) & Global Developmental Delay. Student A has very limited verbal means of communication. He is reported to have behaviours which challenge, associated with frustration in expressing his needs and feelings. He is described to be a happy, energetic boy who likes routine. Support staff are required to use short and simple verbal instructions, giving him plenty of time to process them.

He was born full term, following a normal pregnancy; he was a well child and he passed his NHSP. Parental reports indicate awareness that he was not reaching typical developmental milestones as early as 6 months old. Delays occurred in many areas of early development including speaking and walking. He has been placed in SEND educational settings since pre-school.

Upon entry assessment to Seashell Trust, Student A was described as being "very unresponsive to sounds", with limited information obtained from local audiology appointments, there were no hearing loss risk factors reported in his medical history and no parental concerns.

Throughout his educational placement at Royal School Manchester he has been receiving the following interventions, to support his Educational Health Care Plan (EHCP), alongside his individual educational objectives:

- **Speech & Language Therapy (SLT)** - has included supporting PECs communication, creating objects of reference (ORs), hand-under-hand signing and intensive interaction, as well as training for his support staff to facilitate this intervention.
- **Audiology** - has provided training to support staff on considerations for an optimal listening environment, motivational listening activities and the importance of supporting everyday functional listening. In addition the service has carried out listening programs and a music based rehabilitation program.
- **Occupational Therapy (OT)** - has developed sensory strategies to maintain the students 'just right' level of alertness, enabling the most receptive learning state.

The intervention provided by the individual's MDT has had a strong focus on developing his expressive and receptive communication. Throughout the placement all student progress is tracked using a battery of assessment tools, depending on the individual.

Student A's progress has been monitored using both the engagement model (replacing P scales 1-4) and MSI assessment (known as Victoria School MSI Unit Curriculum). A combination of these assessment tools allows for use of linear (quantitative) and qualitative means of recording student progress.

### Analysis of Progress

For the purpose of this case study we have chosen 5 engagement model descriptors as they best reflect the progress made in relation to his APD diagnosis.

	2017	2018	2019	2020
Speaking	RED	GREEN	GREEN	GREEN
Listening	RED	GREEN	YELLOW	YELLOW
Learning Behaviour	RED	GREEN	YELLOW	YELLOW
Emotional behaviour	YELLOW	YELLOW	YELLOW	YELLOW
Using & Applying	RED	GREEN	GREEN	YELLOW

The table above shows progress reported during the students' years at Seashell. Legend: Red = Behind target, Yellow = No Progress, Green = Progress made.

In the first year at Seashell the performance descriptors 'Speaking', 'Listening' & 'Learning Behaviour' were observed to be below target.

In 2018, following a further year of intervention, rapid significant progress was recorded. The following interventions were active:

- Regular therapy input.
- Introduction to music based rehabilitation program (Aurhythmics) & listening program embedded into his individualised curriculum.
- PECs communication method in place.
- Occupational therapy sensory strategies in place to ensure 'just right' level of alertness (enabling the most receptive learning state).

In 2019, progress was recorded in 'Speaking', with limited progress observed in other areas. It is noted that during this academic year, there was a change to the speech and language therapist working with Student A and a change in SLT strategy.

2020 showed progress in 'Speaking'. Limited/No progress recorded in other descriptors can be attributed to:

- A diagnosis and subsequent medical management of Epilepsy, following a period of frequent seizures.
- Closure of the school due to COVID-19 resulting in a period of limited online based learning only.
- Reduced therapy/education input due to part-time return to school.

In 2021 there was a reintroduction of SLT strategies and a focus on Objects of References, Hand-under-hand signing and Intensive Interaction.

### Conclusion

Based on these 5 descriptors of the engagement model, the biggest progress has been made in the 2nd year at Seashell. The progress can be contributed to:

- Adjustments to the learning and communication environment (modifications to improve access to auditory information, minimising background noise levels)
- Use of compensatory strategies (communication tools, problems solving memory, attention)
- Direct treatment to remediate disorder itself (computer software, individual therapies).

Since 2019 the level and inconsistency of input due to health issues and COVID-19 appears to have had a significant impact on progress recorded using the engagement model. However Student A has continued to make steady progress when reviewing the combined outcomes measure tools (ie. Both Linear and Qualitative assessment tools).

The severe, complex and diverse needs of the student, necessitated an individualised planned programme of study/intervention and learning to take into account the distinct learning needs and styles of the student.

The MDT holistic approach met the needs of the student, and the intervention was based on the presentation of the student rather than the diagnoses. Therapists demonstrated recognising the child's needs & behaviours, and embedding of communication strategies and routines, contributed towards expected outcomes within the EHCP.

### Further Considerations:

- Need for further study of APD in children's population with learning difficulties and other complex needs, including autism.
- Need to develop specific assessment tools which support an APD diagnosis.
- Need to use appropriate systems for tracking individual progress, including interpretation of both qualitative and quantitative data.
- Improve accessibility to specialist centres, which supports an MDT approach through training for professionals across disciplines.
- Implementing a universal approach to intervention, which includes up-skilling support staff to ensure therapy programmes are well embedded within a child's educational setting.
- Focus on individualised intervention based on the child's presentation, alongside diagnosis, to enable pre-diagnosis intervention.
- Establish regular and intensive programmes of intervention with cross-discipline goals.

### References

- <https://www.gov.uk/government/publications/the-engagement-model>  
<https://www.natsip.org.uk/doc-library-login/curriculum/victoria-school-msi-curriculum/1423-victoria-msi-curriculum-toolkit/file>  
<https://www.thebsa.org.uk/resources/position-statement-practice-guidance-auditory-processing-disorder-apd/>