

# **Auditory Processing Disorder in the United Kingdom (APDUK)**

## **What is Auditory Processing Disorder? (A Brief Description)**

### **A Description**

Generally for most Invisible Disabilities, the causes are similar in nature, faulty link in the human information processing system.

For those who have Auditory Processing Disorder (APD) it is the Auditory information processing function, which has a faulty connection.

APDs are normally not deaf, in fact most APDs have A1 hearing, they just do not process what they hear.

They may process part of what they hear but, without processing the rest, often the whole meaning is lost, or they perceive a totally incorrect idea of what has been said.

When APDs have a processing failure, they do not process what is being said to them.

They may be able to repeat the words back word for word, but the meaning of the message is lost, not processed.

Simply repeating the instruction is of no use if an APD is not processing, neither will increasing the volume help.

Most APDs have random Auditory Processing Disorder.

I use the word random because APDs cannot control when we process auditory information and when we do not. (Like a loose connection in a faulty computer processor it fails when you least expect it to).

APDs have an Auditory (verbal) information Processing Disorder, therefore APDs will also have problems processing verbal code, and text is only verbal code.

So Auditory Processing Disorder is extended to reading and writing, processing Auditory code.

Therefore APD is a cause of Dyslexia.

(As is the corresponding Visual Processing Disorder but for very different reasons.)

Some APDs are easily distracted by background noise and / or unexpected noises.

These Environmental factors disrupt their processing strategies, and in many instances mean that they have to go right back to the beginning of the task, to

**understand what they are trying to do.  
Especially with a conceptual subject such as Maths.**

**APDs are unlikely to participate in debates unless they have had time to prepare their case.  
This poses problems for self-advocacy, and can lead to discrimination and bullying.**

**APDs will process a discussion, as it unfolds, and may not fully understand the discussion there and then, but they may be able to fill in the gaps later. Eventually they may have a better understanding of the topic than the actual participants, when they have finally processed the information.**

### **Coping Strategies**

**Coping Strategies for APDs are developed on individual life experiences.  
This is because the strategies have to work in, and be stored in the limited space of the Short Term Memory. (In computer terms, these strategies take up a great deal of RAM).**

**So APDs develop and select strategies they need to cope with their own life challenges, some are rejected or forgotten if not used.**

**New strategies are always being developed.**

**Unfortunately some of the newer strategies may by-pass an existing strategy, and so this useful strategy may need to be re-linked into the system.**

**Hence APDs can perform a specific task on one day perfectly, but struggle on a later day.**

**Many APDs develop an alternative way of thinking to cope with their disability.  
So if the Auditory function is faulty, Humans try to develop their visual and other communication skills. Used by our ancestors before we developed the skills of speech. Some become Visual Spatial Learners, using visual (pictorial) methods of thinking and learning.**

**Some APDS use back up strategies, such as lip-reading, body language, and eye contact. (The later two can become confusing as people say one thing with their body language (truth), and something else with their verbal communication (not quite the truth)).**

### **Hidden Implications.**

**(There are many hidden implications)**

**APD is for life, as with other Invisible Disabilities.**

**APD cannot be cured. But with the correct diagnosis, remediation and strategies, APD sufferers can learn to cope with their disability with the help of those around them.**

**APDs may find groups of more than 3 or 4 people threatening as they unable not process multiple auditory (verbal) input.**

**APDs find following social interaction difficult especially with new people, and those with good adversarial debating skills.**

**APDs may have problems filling in textual forms Problems processing what the meaning of the questions mean will in turn cause problems when trying to process an answer.**

**APDs who have a high IQ are more difficult to diagnose, as they are very good at developing their own coping strategies.**

**APDs really find life difficult to cope with when leaving the relative safe confines of the education system if they have not come to terms with their disability and how best to cope with it. They can become very isolated.**

**APDs could try the **APDUK** web site Communication Section at <http://www.contact.apduk.org>**

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From the Presentation of

## **Management of Auditory Processing Disorders**

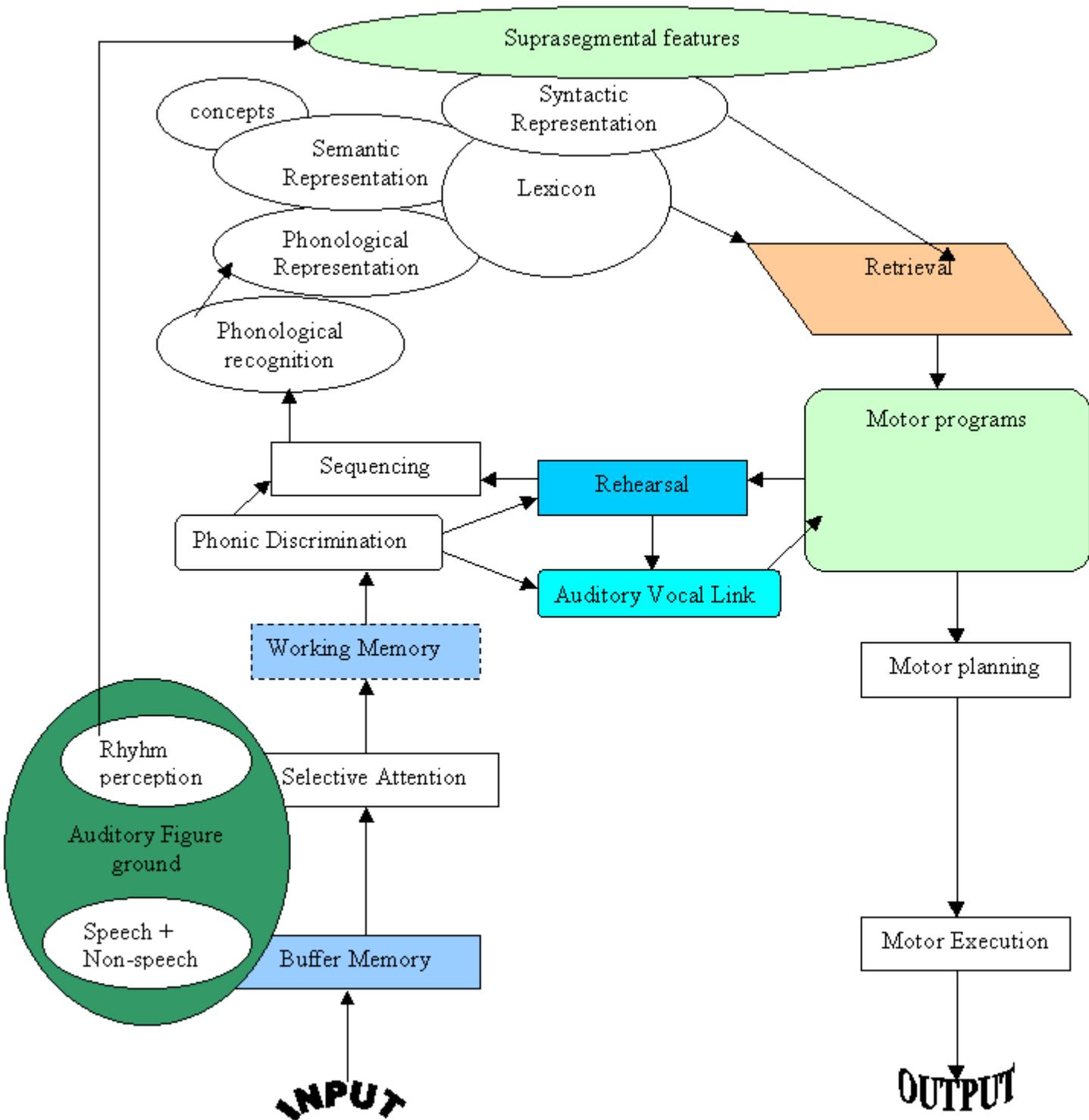
**By Dilys Treharne**

[http://www.shef.ac.uk/uni/academic/R-Z/spsu/academics/treharne\\_dilys.html](http://www.shef.ac.uk/uni/academic/R-Z/spsu/academics/treharne_dilys.html)

This is a parent's summary of a presentation by Dilys Treharne  
More detailed information is available from Dilys Treharne via Sheffield  
University.

### **Processing Problems**

Separating target sound from background noise  
Auditory Closure tasks  
Memory: Sequential and processing  
Recognising sounds  
Sequencing sounds  
Sequencing Verbal Concepts  
Rhythm/ pattern perception and prosody  
Processing at speed  
Integrating Speech with Movement



## **Environment Compensation Remediation**

Bellis 1996 Tripod

FM sound reproduction systems  
Visual aides / clues handouts  
Demonstrations of task to be performed  
Limited auditory input  
APD is not curable  
Use an Auditory recording device.

## **Remediation Activities**

To reduce the degree of difficulty by training specific skills  
To stimulate the system to produce a functional change  
Reduce Redundancy of language - sample language

### **The Listening Program (TLP)**

from

**Learning-Solutions**

or

**Rocky Mountain Learning Systems**

or

**Advanced Brain Technologies**

## **What is The Listening Program?**

Sound Stimulation auditory training program  
Derived from the Principles of Tomatis  
Home programme  
User friendly  
8 week duration  
8 CD set  
classical music - filtered  
sounds of nature

sounds played different speeds, and intensity etc.

### **What Mechanisms does it employ?**

- Sonic Neuro-technologies
  - Filtering
  - Gating
  - Binaural beat effects
- Psycho-acoustic refinements

### *Assessments*

- Scan C revised (Keith 2000) base line measure for screening
- GFW Auditory Skills Battery
  - Selective attention
  - Memory (Woodstock 1976)
- TAPS-R
  - Selected subtest (Gardner 1985)
- Rhythm test TraCoL (Treharne 1999)

### **Selective attention**

Problems hearing Speech in a noisy background

Test used :

- GFW Test of Selective attention

Subtests

- Active listening - report what had been heard.

- Fan background (white noise)

- Cafeteria babble background (pink noise)

- Voice - person reading a story

## **Memory**

Test of Auditory Perceptual Skills - Revised Gardener  
Digit Span forwards  
Digit Span reverse  
Auditory Sequential memory  
Digit span (TAPS)  
Working memory  
Reversed digit span (TAPS)

## **Rhythm**

Temporal Pattern perception  
TraCoL

For more detailed results and statistical data of the research done; please contact Dilys Treharne via Sheffield University.

## **Separating Target from background noise**

Test :  
SCAN,  
GFW selective attention.  
Therapy :  
TLP,  
Earobics  
Discrimination tasks with increasing background noise

## **Auditory Closure Tasks**

Test :  
SCAN,  
ITPA  
Therapy :  
Familiar lines completion  
Rhyme activities  
Missing syllable exercises  
Missing phoneme exercises  
Add background noise

Localisation training  
TLP  
Vocabulary building

### **Working Memory**

Test :  
Digit  
Word and sentence span (TAPS)  
GFW memory  
Therapy :  
Aunt Sally  
Kim's game  
Logic puzzles  
Matching games  
Earobics

### **Recognising Sounds**

Test :  
Tallal type discrimination tasks  
SCAN  
Standard auditory discrimination tasks- timed  
Non speech patterns (eg TraCoL)  
Therapy :  
Phoneme discrimination training  
Earobics  
Prosody Training

### **Sequencing**

Test :  
Tallal type tasks  
Verbal comprehension of a series of verbal concepts  
Non speech sequences eg TraCoL  
Therapy :  
Earobics  
Aunt Sally went to market  
Kim's game with sequences  
Some FastForward activities.

### **Temporal Pattern Processing**

Tests :

TraCoL

Therapy :

Training in the recognition and use of prosodic aspects of speech eg  
stress change eg *record* / *Record*

Sentence stress training

Non speech pattern recognition

Copying and word prosody recognition

### **Processing at Speed and Inter-hemispheric Processing**

Test :

SCAN

Verbal comprehension tasks timed eg TROG

Therapy :

TLP

Cross modal exercises

Brain Gym

Singing to music

### **Integrating Speech with Movement**

Test :

Walk talk tasks

Therapy :

Involves inter-hemispheric activity

Brain Gym

Following the use of The Listening Program during trials  
(For more detailed results and statistical data of the research done; please  
contact Dilys Treharne via Sheffield University.)

An improvement in auditory figure ground task was evident

An improvement in sequential memory tasks was evident

Qualitative changes in attention were noticed

Change was more marked in those more severely affected.

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## **Ideas to be Considered Prior to Creating an IEP for an APD**

**Always ensure the learner with APD is looking at you when you speak to them this allows them to lip-read more easily, a common strategy in those with APD, and to ensure they know you are talking to them.**

**Speak clearly and ensure they have understood what you have said, not just by repeating it back to you, which can be done without comprehension.**

**Seat the learner with APD at the front of the class to allow them to lip-read what the teacher says more easily.**

**Ensure that the learner has a clear view of any board used to provide written information.**

**Always provide written information on the board when speaking and always provide written additional instructions on paper for the learner to refer to when they are attempting a piece of work.**

**This will ensure :-**

- (i) that the learner has visual reinforcement of the oral instructions, should they forget or experience a delay in processing the information, and transferring the instructions to the kinaesthetic, the action of performing the task.**
- (ii) that the learner is given a sense of security in an area that has previously been a situation of failure.**

**Try to explain the purpose of the task you want the learner to perform, as many APDs are visual spatial learners who respond better to the whole concept, rather than asking them to perform an abstract exercise  
E.g. if they are to practise spellings or “wr” words tell them the purpose is to distinguish them from “r” spelling words etc.**

**Use the same vocabulary for specific task requests, and be very precise with your instructions, allowing the learner to complete each stage before going on to the next.**

**E.g. Ask the learner to “put his pencils in the pot” and then “put his book on the pile”, instead of asking him to “tidy up”.**

**There is a need to build up a process of associations so that general requests can eventually be used.**

**Always present instructions in small easy steps to avoid confusion, allowing sufficient time to complete one section before going on to the next.**

**Make sure the learner understands what they are expected to do and encourage them to ask for help. As a precautionary measure check with them in case they do not have the confidence to do so.**

**Those with APD are not immediately aware that they have not understood something that has just been explained to them.**

**Many can train themselves to just listen to a speaker, and try to record the message in their long-term memories and then replay it later to try and make sense of what was said.**

**When doing this they will not try to ask questions as it stops the recording flow, and cannot answer questions asked of them.**

- (i) Oral information may, at first, appear to have made sense, but when they have to reproduce this information they may have not have fully understood or processed (retained) all the information needed to gain a full understanding.**
- (ii) Sometimes they will have not processed part of the message, and will be unaware of this, e.g. they may go away and complete a task but miss out a vital component.**
- (iii) Sometimes they will not have processed any part of the message. They will be totally unaware that they have missed anything, until they are asked about that message at a later date. They will act as if they have not heard it.**
- (iv) It has been noted that the delayed processing coping strategy has been developed by adults with APD and by teenagers with APD. Most adults have developed subconsciously, but some teenagers may have developed it and may have been encouraged to use this skill to help themselves.  
This delayed processing is done using the long term memory like a video recorder, but like most filing systems it sometimes takes a long time to find the correct file, with the right contents, just when you need it.**
- (v) APD learners use their short-term memories for their daily coping routines; which they need for their priority survival needs and young children do instinctively.  
Adults may be able to select their priority routines with regard to**

**their careers, or whatever they consider to be their main life priority, and that priority governs the use of the short - term memory (coping strategies and correction routines) everything else is secondary until that task is finished.**

**Allow extra time to complete tasks to allow for delays in processing and transference of information.**

**It may help to ask the APD learner a question, and prefix by saying I will ask you this question and come back to you in a moment for your answer. (The teacher could then go on to ask another pupil a different question, and then come return for the APD learners answer)**

**This will give the APD learner an some extra time to process the question; and to formulate and process an answer**

**Ensure the learner has a quiet working environment as many can be easily distracted by background noise and conversation by other pupils. Try to ensure that other pupils understand that they should not be disturbed when working.**

**Some APDs like to use music as a continuous and predictable background noise, which also helps eliminate other random distracting background noises.**

**Some APDs find FM audio systems useful in classroom / lecture environments as it concentrates the message, and eliminates background noise.**

**Often APDs have a short attention span due to the amount of effort needed to try and follow what is happening in the classroom.**

**As a result of all the extra effort needed they can become very tired, or irritable and their behaviour may suffer.**

**They may have episodes of daydreaming or “switching off” for a while when things become too much.**

**Susceptibility to background noise and bright lights can lead to headaches and lapses in concentration.**

**APD learners will most certainly be lacking self-esteem and confidence in both educational and social settings. They are often called lazy, slow, stupid or told that the difficulties they are experiencing is a direct result of a bad attitude.**

**A positive learning environment is essential.**

**Every effort should be made to promote a sense of self-worth.**

**The lack of confidence and self-esteem in learners with APD means that in many circumstances they may leave things to the last minute.**

**This is caused by confusion in ascertaining what is expected.**

**This sometimes means learners find starting a task difficult and this can be misconstrued as laziness or negative behaviour.  
They may need a great deal of help in planning a piece of work.**

**Learners with APD are very vulnerable in a social setting because of their difficulty in processing conversation, and in word retrieval.  
Which makes them more susceptible to bullying.  
Any negativity in this respect shown to them by a teacher can spread to their peers, and this should be not be tolerated.**

**APD learners may have some problems absorbing information from text.  
Allow time for delayed processing.  
Use a more visual approach to teaching, such as picture associations, coloured text, and different formatting of text to make information stand out.**

**Provide a printed homework timetable for the learner and a copy for parents. So that they can help the learner understand what they have to do, and explain it in terms that they can more easily understand.  
Parents cannot help if they do not know what the learner is expected to do.**

**Provide a home/school book so that the parents can provide feedback. This can provide a means of communication between the parents and teachers.  
Enabling the parents to explaining what the learner has found easy or difficult, and the coping strategies they use to complete the task.  
Thus helping the teacher build up a better picture of the way the learner learns and increasing the teacher's ability to accommodate their learning style.**

**Help the learner to build coping routines, daily and weekly.  
Coping routines are built on life experiences and at a young age this is difficult as the learner does not have too many to fall back on.  
But small routines can grow.  
Also the APD learner needs to continually review these routines both new and old, as some new routines may bypass existing routines. (One day able to do a task using a coping routine, but not able to do it the next day).  
Ask the learner how they coping with a new task.  
Both learner and teacher should be involved in this development process.**

**APD learners find it difficult to process more than one source of auditory input.  
So group conversations and debates are difficult, if not impossible, to**

**process as they happen.**

**Many Adult APDs have subconsciously developed the skill of Delayed Processing. (Which has been noted amongst adults and some teenagers with APD.)**

**This skill may be accelerated if younger APDs are aware of the nature of their disability at an early stage of their development.**

**APD learners will need to be able to advocate their disability amongst their peers and they may need help in this.**

**They may appear to others to be slow in understanding verbal instructions or conversations.**

**They need to understand and make others aware that they will always be like this, and they will need to be able to explain that they have a disability to friends, teachers, and adults.**

**They will need to know something about the nature of their disability. Some of the advantages and disadvantages, the latter will be obvious to all.**

**The advantages will not be so apparent and less obvious to identify. As they develop their own coping strategies, they also develop the compensating skills from their own personal talents, such as a heightened visual perception.**

**APD learners may have to work out the basic concept of what any theory means from basics each time they want to use it.**

**And any interruption or break from their thought patterns during this process may require them to restart their understanding from the beginning all over again.**

**This is particularly relevant to the learning of Mathematics.**

**This is why some prefer to start a project and see it through to its conclusion, regardless of any time factors. This is partly because it has taken them so long to plan and start the task that they may forget what to do if it is left unfinished.**

**Multiplication tables sometimes present problems for APD learners.**

**If the learner understands the basic theory for the existence of tables (a practical use, as a visual guide) then they can begin to build a list of associations, which give meaning to tables and can create some coping strategies.**

**If learning tables is an ongoing problem, provide the learner with a ready-printed multiplication square to use, as many learners may never learn them.**

**APD learners will always have a problem in reproductive speech.**

**This is not because they have problems with speech or do not know what**

**they want to say, but are simply trying to retrieve the word they want from their long-term memory.**

**Word retrieval is also a major problem in producing written work.**

**APD learners may also try to explain something over and over again, repeating themselves in the process.**

**This is part of the re-assurance process in which they**

**(i) Try to show others that they understand something about the topic by going over it in their mind**

**(ii) Aid their understanding of the topic**

**(iii) Seek reassurance that they have understood the topic by repeating it in their own words.**

**APD learners have problems using Telephones.**

**One of the main reasons why individuals with APD cannot understand speech on the telephone is that the phone companies send only part of the speech signal through the lines. The signal is degraded before it even gets to the recipient phone.**

**Individuals with processing disorder often have problems understanding degraded signals and phone conversations can be complicated by this fact. Also, there are neither facial nor body cues to help the processing-impaired individual to compensate for what they have not processed.**

**This needs to be explained to their friends who may wish to communicate by telephone.**