

Auditory Processing Disorder / Difficulties: Are they listening or can't they hear / process?

Dr Lindsay Peer CBE
Educational Psychologist, Expert Witness, Speaker & Author

www.peergordonassociates.co.uk

Dr Lindsay Peer CBE 1

Hearing .. Listening .. Auditory Processing

- *Hearing* – sense sounds
- *Listening* – filter out background noise / hear information
- *Auditory processing* – do something with information

Common link ... difficulty understanding

Dr Lindsay Peer CBE 2






Many SEN children / young people have auditory processing *difficulties*. If more extreme, may be Auditory Processing *Disorder*.

Over decades *known as*:

- “(Central) Auditory Processing Disorder”
- “Auditory disability with normal hearing”
- “Obscure auditory dysfunction”

Dr Lindsay Peer CBE 3


3 types of APD

1. *Developmental* – Present in childhood with normal hearing 
2. *Acquired* – Ageing or neurological trauma / infection 
3. *Secondary* – APD with peripheral hearing impairment e.g. Otitis media (Glue ear) 

Dr Lindsay Peier CBE

Frequency

- Approx 5% of school-age children have a type of APD
- In children with learning difficulties, prevalence of APD is 43%
- Approx 50% of dyslexic children with dyslexia have coexisting APD



Dr Lindsay Peier CBE

Main international focus upon ...

Developmental APD because of links to difficulties learning, affecting:

- Language
- Literacy
- Curriculum access
- Social interaction in some cases
- Lack of confidence, low self-esteem etc in some cases

Dr Lindsay Peier CBE

Next level of focus:

Acquired and Secondary APD as they affect functioning across the lifespan

"High co-occurrence of APD with language, attention, memory, and executive difficulties in both children and adults underscores the importance of a multi-faceted approach throughout life." (British Society of Audiology 2018)

NB: There are many international APD statements including one from the Australian National Acoustics Laboratory (NAL, 2015)

Dr Lindsay Peier CBE

7

Signs in younger children ...

- Learning rhymes / songs
- Speech / language delay / Glue ear
- Locating teacher's voice when moving around the room
- Poor listening and / or auditory memory / instructions
- Difficulty with phonics / phonological skills
- Confusing similar sounds e.g. 19 / 90
- Worse in noisy background e.g. children chatting / chairs moving / music playing / traffic
- Noise leading to stress



Dr Lindsay Peier CBE

8

Signs in older children ..

History as before and then ...

- Listening (despite normal audiogram)
- Attention / remembering
- Processing auditory information
- Greater difficulty in background noise
- Need for frequent requests for repetition (unless embarrassed)
- Poor attention to / and memory for auditory instructions
- Challenges grasping language spoken at speed
- Lag in auditory responses
- Learning other languages

Dr Lindsay Peier CBE

9

APD alongside ...

Can have APD alongside other conditions. **All** must be considered and managed; not just a "primary need".

- Poor attention could be due to a primary attention disorder **or** secondary to auditory difficulties
- Always use recommendations for managing other disorders, deficits, difficulties and impairments in areas e.g. focus and attention, memory, speech and language

Dr Lindsay Peier CBE 10

NB: Listening skills ...

- Higher level language & auditory skills not fully developed until approx 15 years of age
- One of last higher order listening skills to develop is isolation of one voice in background noise e.g. teacher. Thus *limited value* telling young children to 'Listen!' Their listening skills are different to adults



Dr Lindsay Peier CBE 11

Understanding Speech


"We would never teach reading in a classroom without lights. Why then do we teach in acoustical darkness? Speaking to a class, especially of younger children, in a room with poor acoustics, is akin to turning out the light."

John Erdreich PhD



Dr Lindsay Peier CBE 12


Is lip reading an answer?

- Can only lip-read words you know!!! Tiring! Approx. 60% of speech only understood by proficient lip-reader. 
- Unable to hear many sounds, especially in noisy classrooms / noise outside. *How do we teach phonics???*
- Even if quiet, cannot hear high frequency sounds (consonants) which help in English & limit understanding → may be behind in class.
- Recognise words consistently? Hear sounds when spelling?

Dr Lindsay Peier CBE

13

General Tips ...

- Give **processing time!** 
- Improve acoustic environment - Reduce background noise & ensure good lip reading conditions e.g. carpets, curtains, high ceilings, lighting on face & not behind, switch off low level humming – computers / TV
- Gain attention before speaking; name first & face child. Speak clearly & slightly louder than normal; do not exaggerate speech. Teach non-verbal language!

Dr Lindsay Peier CBE

14

Assistive Listening / FM system device

- Amplifies speech signal if noise increases
- Addresses acoustic problems of distance from speaker (which decreases the sound level / volume)
- Deals with negative effects of reverberation (e.g. echo in room degrades speech signal)

How:

- Microphone worn near the speaker's mouth
- Transmits speech signal to receiver
- Receiver worn by the listener behind / over ears

Dr Lindsay Peier CBE

15

Soundfield Systems

Fixed systems:

- Amplification system that gives even spread of sound around a room
- Speakers in four corners
- Teachers wear a microphone



Portable systems:

- Teachers wear a microphone
- Microphones can additionally be used by others

Dr Lindsay Peier CBE

16

To help younger children e.g.

Make a noise ...

- What is it?
- From where is it coming?
- Try and focus upon it in quiet and in a noisy room



Make various sounds ...

- Are they the same / different?
- Can we hear the birds in the trees?
- Sequence the sounds we hear

Dr Lindsay Peier CBE

17

To help for older learners e.g.

- Pre-teach vocabulary / concepts / experiences
- Use morphological approaches rather than phonological
- Check understanding; ask them to explain (Not Yes / No!)
- Use visual material / demonstrations to reinforce learning
- Seat slightly back & to side; can turn to see speaker
- Minimise distractions e.g. waving hands in face / jewellery / mouth occluded



Dr Lindsay Peier CBE

18

And ...

- Use film with sub-titles; difficulty lip reading
- Break tasks down; small and manageable
- Provide written summaries
- Download work for home prior to teaching; USB? / Intranet?
- Ask teachers what works in their subjects; share



Dr Lindsay Peier CBE

19

To do ...

- Train all staff – and help parents
- Improve classroom acoustics
- Limit distractions, excessive noise, clutter
- Trial FM Personal Assisted Listening device; more effective if acoustic measures in place
- Investigate Sound Field Systems
- Actively teach listening and attention skills
- Take advice from Teacher of Deaf
- SENCo to guide



Dr Lindsay Peier CBE

20

Further Information ...

- Position Statement and Practice Guidance (British Society of Audiology) 2018
- Auditory Processing Disorder (APD) Classroom Audit - See Practice Guidance of Management of APD – British Society of Audiology 2011
- Info re: Assistive Listening / FM system devices e.g. <https://www.phonak.com/com/en/hearing-aids/accessories/roger-focus.html>
- "Listen to Learn" program - Pauline Grant, ToD
- "Auditory Processing Disorder?" Book by Alyson Mountjoy
- Auditory Processing tests – Audiological Physicians at specific hospitals

Dr Lindsay Peier CBE

21
