

# Auditory Processing Disorder

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Auditory Processing Disorder (APD) is distinguished by poor perception of both speech and non-speech sounds and has its roots in compromised neural function. It adversely affects daily life mainly by diminished ability to listen and respond to sounds in a proper manner. It is a collection of symptoms that often co-exists with other neuro-developmental disorders. A multi-disciplinary approach to manage APD which imbibes functionally, test, and profile driven strategies is preferred modality. (Audiology, 2013)

According to American Speech-Language-Hearing Association (ASHA), (Central) Auditory Processing Disorder ((C)APD) refers to difficulties in the perceptual processing of auditory information in the central nervous system and the neurobiologic activity that underlies that processing and gives rise to the electrophysiologic auditory potentials. (American Academy of Audiology, 2010)

## Management

A detailed medical history and comprehensive audiological assessment aid in identifying the high-risk individuals for (C)APD. The principal candidate for the probable diagnosis of (C)APD is an adult who fails to do well with amplification despite the fact that every effort was made to ensure an efficacious fit. (Ill, 2014)

A management myth is that there is no cure for APD in adults. The management should be guided by results of assessment. As most adults, will live with these disorders all throughout their life, a lifelong approach with stress on self-management is vital. (Whitelaw, 2008)

## **A number of principles determine the intervention approaches.**

These include:

- Deficit specific intervention; which needs to be personalized according to specific auditory deficits presented by the individual.
- A multi-disciplinary team comprising of following but not limited to audiologists, speech-language-pathologists, educators, and psychologists.
- Use of both bottom-up and top down approaches. Bottom-up approaches include acquisition of auditory signal, auditory training as well as environmental modification. Top down approaches address higher level central functions such as language, cognition, and memory.
- An early intervention; the intervention commences as soon as a diagnosis of APD is arrived at. (Teri James Bellis, 2008)

### **Environmental adjustments**

Environmental adjustments may include looking into room acoustics and providing options for sound-augmentation technology. Personal FM systems have been used in these patients with success for a long time. Audiologists can contribute further by providing compensatory skills that maximize communication in both the workplace and in social gatherings. (Whitelaw, 2008)

### **Central Resources Training**

*Central Resources Training*: This is also referred to as compensation strategies. The objective of this training is to help the subjects overcome residual dysfunction and address secondary deficits by strengthening cognitive, language, and related abilities. Through the utilization of these strategies patients with APD are trained to become active listeners and accept responsibility for their listening and learning outcomes.

The objective of *'Direct remediation via auditory training'* is to boost the auditory operations of patient by changing the way brain processes the sound. These include targeted, bottom-up activities that make best use of neuroplasticity and can be formal (i.e., in a sound-treated booth with acoustically controlled stimuli) or informal (in the home or school setting using targeted games and activities). (Teri James Bellis, 2008)

*Listening and Communication Enhancement (LACE) and Auditory Rehabilitation for Interaural Symmetry (ARIA)* are auditory training programs which incorporate brain plasticity[i] in auditory training programmes and address particular auditory processing skills. LACE addresses listening in noise, and ARIA addresses dichotic listening skills, both of which are materials designed for adults. In addition, some auditory training programs have been linked to electrophysiologic measures that can be utilized to provide unique measures of improvement. (Whitelaw, 2008)

### **Conclusion**

In conclusion, it may be said that interventions for APD/(C)APD must incorporate bottom-up and top-down methodologies. Changes in method of listening and augmenting listening and learning environment and overcoming auditory deficit by targeted auditory training activities are other vital components of a multipronged strategy to address APD. (Teri James Bellis, 2008)

## References

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[i] The ability of the brain to change in structure or function in response to experience.