Habilitation
Once a diagnosis has been made in which the TAC feels confident, there needs to be discussion regarding the most appropriate response in terms of amplification, auditory experiences and possible alternatives to amplification. The ToD will be aware that a good habilitative package may include more than one solution and he or she will need to be proactive in promoting this flexibility of response during such discussions. This will include:
• consideration of a range of possible appropriate settings and learning environments most conducive to responding to a range of complex needs
• awareness raising, INSET and information exchange for the family and the setting(s) finally agreed on
• checking, maintaining and in some cases providing audiological equipment
• setting up effective monitoring and evaluation processes where the TAC and the young person have the opportunity to ‘fine tune’ the habilitative package
• ensuring that at all times the young person is given the opportunity to contribute meaningfully to this process. This will require considerable creativity in the case of those with profound and multiple needs but should not be ignored or tokenistic.

Conclusions
ToDs have considerable relevant knowledge and a unique skill set with which to support the most vulnerable of deaf learners. Where such youngsters attract a complex team around them it will often be the ToD who is able to best co-ordinate information exchange and support.

We are used to being flexible in our response, understanding the needs and aspirations of the child, promoting high expectations both in the child and the team around that child.

As more and more settings become efficient and successful at including and developing the full potential of regular deaf children, so the challenge continues in ensuring similar appropriate provision for those with complex needs.

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The APD factor
While auditory processing difficulty is a relatively new term, David Couch seeks to raise awareness of the condition and looks at how children with APD might fare in the education system

Auditory processing difficulty (APD) is a condition where a person has difficulty making sense of the sounds he or she hears. The most important expression of this difficulty is when listening to speech, particularly in noise. It may be the case that many (but not all) children who have language learning difficulties may also have APD. However, it is useful to make the distinction that the term APD is used when the child finds it difficult to understand when listening, whereas the term speech and language difficulty means the child has difficulties developing and/or understanding speech and language.

The ability to listen to sounds involves memory, learning, vision and attention, as well as hearing. If any one of these functions is impaired, listening and understanding may be compromised. The preferred term used to describe the resultant processing dysfunction is auditory processing difficulty.

The British Society of Audiology (BSA) APD sub-group steering committee published a position statement in February 2007 setting out its view on the description, definition and diagnosis of APD. The description of APD is proposed as a ‘working definition’: ‘APD results from impaired neural function and is characterised by poor recognition, discrimination, separation, grouping, localisation, or ordering of non-speech sounds. It does not solely result from a deficit in general attention, language or other cognitive processes.’ (BSA 2007)

The position statement makes it clear that a child with APD does not have a hearing loss and that audiometric testing reveals hearing within normal limits. Conventional hearing aids, issued to children who have a hearing loss, are therefore not recommended.

The APD team at the MRC Institute of Hearing Research (IHR) is in the process of developing a diagnostic test battery, which will include psychoacoustical, audiological and cognitive assessments. The team is currently completing a study of school children in four locations (Nottingham, Exeter, Glasgow and Cardiff; 1,600 children aged 6–7 and 10–11 years old). Guidelines for selection of tests for APD have been published but the proposed test battery has not yet been agreed.
At the present time, the UK does not yet have an agreed battery of tests with which to diagnose APD. There are clinicians who are diagnosing APD using an American protocol and there may be others who are using tests based on this. The latest publication, *Selection of tests for the assessment of Auditory Processing Disorders: a critical approach* (BSA APD steering group 2008), counsels caution in the selection of tests and maintains that all tests are subject to validation.

It is possible that the IHR will develop a battery of reliable, valid tests that will enable clinicians to diagnose APD. It is important that we, as educationalists, are assured of the validity of the diagnosis and the degree to which the child is affected. The APD group proposes a series of tests that will provide such information. Some children will be severely affected and the diagnosis may be very clear; some will be much less affected and the intervention they require may be very small indeed. Prevalence figures for APD have not yet been established, but figures as high as 10% of the general population have been proposed in the past (MRC APD Booklet, 2004). Current thinking from the MRC puts the prevalence much lower, but we do not yet have an accurate figure.

Whatever the final figure, it does not give us an indication of how many would be so severely affected as to require substantial intervention for this specific difficulty. It should be borne in mind that these children are already in the population and are being catered for within the education system. There is a substantial number of children who have language and literacy difficulties and are taught in a way that would represent a valid intervention for a child with an APD as proposed by some clinicians (one-to-one, small group work etc).

Where a child receives a diagnosis of APD, we would expect to see a significant educational impact. These children will be known to schools and staff and are likely to be receiving some form of intervention. This could include input from a speech and language therapist, an educational psychologist and other professionals who would continue to provide some level of support regardless of the diagnosis. This is likely to be delivered at School Action, School Action Plus or statement level (in England), and the school will be utilising some of its SEN budget for this purpose. In these cases, a diagnosis (of any type) would be helpful and may lead to a change, or addition, to the intervention programme already in place.

Where a diagnosis is made but the impact is less strong, the case for intervention may be more difficult to make. More research into the efficacy of any recommended interventions needs to take place before we can advocate specific support or the purchase of equipment. The school may or may not have put in place additional support, but will be monitoring the child closely. A diagnosis of APD, where the educational consequence is small, is unlikely to result in substantial additional support. However, if computer-generated exercises can be performed at home (as proposed by some centres), there may well be some benefit. Any intervention should be evaluated in each individual case and amended in the light of educational outcomes.

Currently, recommendations from the BSA APD special interest group for children who are diagnosed with APD are broadly:

- computer-generated auditory training programmes to improve listening skills
- a good listening environment (however this is achieved – acoustic treatment, small group work etc)
- personal amplification devices (eg Edulink but not hearing aids).

These recommendations are not in themselves difficult to implement and where the impact of APD is substantial would represent welcome advice. Further advice on the listening environment would also be simple to provide and many sensory needs services already make this available.

**Referral routes**

Currently, diagnosis can only be made by a recognised centre that has the skills and equipment to carry out the assessments and interpret the results. The final diagnosis remains a medical one.

Referral to the specialist centre is most commonly through audiology departments. There have been reported instances where the GP has made the referral, but this has usually been after receiving information from the local audiology department. Referral to the audiology department in the first instance is by the GP following concerns raised by the parents. Parental concerns may have been triggered in a variety of ways, including difficulty communicating with the child. The school itself may have raised concerns and the child may be performing poorly in the view of the teachers, the parents, or both. In some instances, the school may feel the child is performing well and the concerns of the parents are not shared by the school. Parents may feel their child is struggling and has the potential to do better given additional support. This is a difficult situation and must be handled with care and diplomacy.

A typical scenario resulting in a referral to a specialist APD centre would follow a visit to an...
The level of intervention that the child needs is related to the impact of the condition. If the impact is substantial, the school will be using its SEN funding to support the child. In this case, the purchase of assistive devices might be seen as a valid intervention and could be set against other interventions such as additional staffing. The school would choose to purchase the equipment if they felt the impact of the condition was high and the benefit could be demonstrated. Sensory support services may choose to be involved in providing evidence that FM is successful (or not) in APD cases.

Where the impact of the condition is low the interventions would be simple, low cost and not represent a significant load on sensory support services (for example, information leaflets, INSET). The child may also be receiving support from an EP or SLT and this would continue as part of the intervention package, where appropriate.

In order for education services to determine the impact of the condition, it is necessary for the specialist centre to provide evidence that:
- the child’s perception of speech in noise is substantially worse than that of other children of their age
- the child’s perception of speech in noise is substantially improved with an increase in the speech to noise ratio that might be provided through the recommendations made.

Conclusion
Although APD prevalence figures in the past have suggested 4–7% of the general population is affected, prevalence is now thought to be much less than this. Where there is a slight impact on the educational progress of the child, we would expect them to be receiving suitable support. Additional information and suggestions would be welcome in these cases and need not pose a significant strain for sensory support services.

Where the impact of the condition is substantial we would expect these children to be receiving significant additional support. A diagnosis of APD will add to the overall picture of the difficulties the child is experiencing and provide suggestions for intervention. The degree to which the school chooses to implement these suggestions can be informed by a number of professionals (speech and language therapists, educational psychologists etc), including ToDs who have specialist knowledge in the field of FM and acoustics. Again, this need not put sensory support services under significant additional strain.

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