
Chapter 4: Introduction to the Nuffield therapy approach and treatment planning

The Nuffield Dyspraxia Programme has been developed to meet the needs of children with severe speech disorders, and specifically those with significant difficulty with motor programs/programming and motor planning stages of the speech processing model.

The Programme focuses on building up articulatory skills, in small graded steps, through frequent, systematic practice. Phonological contrasts are also taught or reinforced. The materials can also be used to support other aspects of speech processing.

A comprehensive range of materials is included in the programme, to enable speech and language therapists to design appropriate intervention for individual children. The programme should be used flexibly, and supplemented, as necessary, with other resources and approaches.

The materials are most suitable for children between 3 – 7 years, but can be adapted for younger and older children (See Appendix 5). Activities drawn from the NDP have also been used with children with a wider range of speech difficulties (phonological disorder, dysarthria, cleft palate) and with adults and children with learning difficulties.

Aims of therapy

- 1 To build motor programs for speech in small graded steps, working from single sounds to complex words.
- 2 To facilitate speech work by working on oro-motor skills and/or auditory discrimination, as necessary.
- 3 To practise skills at each level until production is automatic.
- 4 To establish and/or reinforce phonological contrasts.
- 5 To work towards establishing a full range of psycholinguistic processing skills at each level.
- 6 To extend skills to sentence level and connected speech.

Nuffield therapy approach

Clinical experience at the Nuffield Centre of working with children with developmental verbal dyspraxia, and in keeping with views from the literature (see chapter 2: Therapy approaches) has demonstrated the importance of a motor skills learning approach in therapy.

Articulation is seen as a complex, hierarchical motor skill: the development of skills at higher levels being dependent on the mastery of lower level components. Skills are established by means of frequent repetition, elicited by cues and reinforced or modified with the support of specific feedback. Success is dependent on a thorough and cumulative approach, and frequent, consistent practice.

Motor speech skills can be conceptualised as a wall (fig 1), with single sounds at the bottom and connected speech at the top. Pre-speech oral motor skills can be seen as the foundations.

The aim of treatment is to “build the wall” basically bottom up.

| | | | | |
|------------------------------|--|-------------------------|--|--|
| | | Connected speech | | |
| | | Phrases & sentences | | |
| | | Consonant cluster words | | |
| | | Multisyllabic words | | |
| | | CVC words | | |
| | | CVCV words | | |
| | | CV words | | |
| | | Single sounds | | |
| Pre-speech oral motor skills | | | | |

The focus is on establishing (as full as possible) a set of **motor programs** at each level of the wall, but also supporting the development of a full range of **psycholinguistic processing** skills. Work on **specific oro-motor skills**, or **auditory discrimination** may be required in order to facilitate sounds which cannot be elicited by imitation. **Motor execution** may be improved by general oro-motor exercises. **Motor planning** is practised by means of repetition and sequencing tasks, and ultimately by sentence level work.

As speech is not only a complex motor skill, but also a linguistic medium, motor programs at each level must be contrastive. The sounds, syllables or words at each level are practised in contrast with each other, in order to establish a **contrastive system**. Sounds/words that the child can already produce are therefore included in activities, and form the starting point for building a contrastive system at each level.

While working on motor programs, **phonological representations** are also clarified, by making the structure of words explicit, through cueing with symbol pictures, and developing phonological awareness. Work on input (**phonological discrimination**) is included, as necessary.

Motor programming skills are practised while establishing programs for a wide range of vocabulary at each level, and in practising sequencing tasks.

Although the emphasis is generally on output practice, frequent modelling of targets, and the development the child’s awareness of sounds and articulatory features, also play an important part in treatment.

Top Tips

- Work on several targets at the same time
- Start from the sounds, words, or at the child is already able to produce
- Incorporate frequent repetitive practice, in order to establish motor programs
- Start from single sounds and CV syllables
- Work on underlying motor skills, or discrimination, as necessary
- Use sequencing practice to consolidate motor programs and develop motor planning skills
- Create a contrastive system at each level of complexity
- Aim for consistent and accurate production of a wide range of sounds/words at each level
- Clarify phonological representations, and develop awareness of phonological structure
- Establish at sentence level before expecting generalisation to connected speech
- Incorporate work on voice/resonance from the earliest stages

Treatment planning

First treatment targets will involve “filling gaps” at single sound level i.e. extending the child’s speech sound range (consonants and vowels), and using the sounds that the child can produce to extend the range of CV syllables. It should be noted that a limited range of consonants /p b m t d n k g h f s w j (ʃ) (l)/ is targeted initially, with harder consonants added later. Long vowels are usually targeted first, then diphthongs and short vowels.

Single sounds and CV syllables are the basic building blocks. Consistent and accurate production is established by means of repetition, contrasting groups of sounds/words and, eventually, sequencing tasks. A wide range of CV syllables should be practised, including real words and nonsense syllable “babble”.

The single sound and CV building blocks are later used to build motor programs at more complex levels. Therapy activities are designed for each target, according to the processing strengths and weaknesses shown, (see assessment probes).

A full range of psycholinguistic processes should be facilitated at each level. At each level of the speech wall, therefore, the child should:

- have a sound system, initially including all vowels and a basic range of consonants /p b m t d n k g h f s w j (ʃ) (l)/, and eventually a full range of sounds
- discriminate between sounds
- have accurate phonological representations for a wide range of sounds, syllables and words
- have accurate motor programs for these
- execute motor programs as accurately as possible
- access required motor programs readily, and incorporate in sequences/phrases
- imitate unfamiliar real words and non-words
- follow instructions to modify production
- sort by onset and rime, or be working towards this
- segment and blend sounds, or be working towards this