

Therapy

Respiration/Larynx

Clinical work at the Nuffield Hearing and Speech Centre suggests that many children with dyspraxic type difficulties in their speech, present with atypical voices: - husky, gravelly, creaky and/or breathy type presentations can occur. On ENT examination, there is rarely any pathological finding, suggesting that the difficulty lies in the controlled timing of the vocal folds and the expiratory airstream, leading to phonatory and vocal difficulties. In addition, it is clear that some children have particular difficulties controlling their respiration for speech. The following activities have been found useful to improve control over respiration, phonation and aspects of voice production.

Aims

- 1 To develop adequate breath support for speech
- 2 To develop control of initiation of voice
- 3 To extend vocal control: length, volume, pitch
- 4 To improve voice quality

Equipment

Pipe and ball, candles, bubbles, whistles, pipes, recorders, straws, plastic tubing, toy aeroplane/helicopter, toy slide, tightrope, cotton reels, roads/paths.

Early Sound Making sheets (Therapy Resources 1, p6).

Voice worksheets (Therapy Resources 1, p24).

Computerised equipment such as the laryngograph is also useful for many aspects of voice work.

1 Developing adequate breath support

The expiratory phase of the normal breathing pattern can sometimes be shortened, or poorly co-ordinated in children with dyspraxic difficulties, resulting in only one or only a few syllables per breath. As a consequence, their speech can sound jerky and stilted, and intonation patterns cannot be used to help convey meaning.

Begin by trying to extend the expiratory phase during a non-speech activity e.g. using blowing activities: aim for long gently controlled blows and for an increasing number of short blows on one breath. For long controlled blows, try:

- Pipe and ball. Aim to keep the ball spinning a couple of inches above the crane for as long as possible.
- Blowing through a straw into a bowl of water with some washing-up liquid (very rewarding, but beware if child does not have blow/suck contrast fully established).
- Blowing big bubbles with a bubble pipe.
- Any blowing toy which requires a strong and sustained flow helps to strengthen respiratory muscles.

For younger children, and those with very severe difficulties, it is often worth starting the exercises with plastic tubing rather than a straw as the tubing is less easily crushed, thus success is more likely. Wine-making tubing is a good size; different sizes of tubing can be found in DIY and hardware stores, for plumbing of washing machines etc.

For several blows on one breath:

- Blow out candles on a birthday (one blow per candle). Gradually increase the number of candles to be blown out from two to five. Larger candles are much harder to blow out, so to succeed as soon as possible, use birthday cake candles.
- Use a whistle or recorder. Give two blasts on one breath, and increase the number of blasts.

2 Control of Initiation of Voice

- Once the child can initiate voice, help him to be aware of this. Show pleasure and give praise for any sound he makes.
- Make him aware of the sound that he has made, and encourage the use of any different sounds he is able to make.
- The aim at this stage of voice initiation, is to encourage the child to produce voice on request, and in a sequence i.e. not random voice production, which is often what the child is doing. He needs to learn to vocalize in response to a cue e.g. "switch your voice on".
- Use voice worksheets with vowel symbols or simple games, using coloured dots to represent vocalisation e.g. model for the child a repeated vocalisation of a long vowel ah /a,a,a,a/ and see if he can copy that model. Encourage gentle initiation, good vocal tone and resonance, together with an even rhythm. Start slowly and increase speed only when the child is able to sustain vocal tone, rhythm etc.
- There are a range of toys available which respond to noises or talk back -these can be very stimulating for some children and are worth trying to motivate voice production.

3 Improving voice quality

a) Principles:

- Make sure work is concrete and visual to aid the child's comprehension of the rather abstract concepts involved.
- Always provide a vocal model when working on voice e.g. demonstrate high-low loud-quiet sounds, etc. Much of the work is aimed at eliciting an accurate imitation of the therapist's model.
- Different textures may help to explain e.g. rough-sandpaper, smooth-stone, etc.
- Fluid, easy movements can help to represent smooth quality.
- "Good/Bad" should not be used to describe voice. Try more accurate descriptors e.g. too loud/too quiet; too high/too low; too long/too short etc.
- Use long vowels initially for voice work before attempting any work at word level.
- Incorporate work on voice into speech work from the beginning and continue monitoring voice as therapy progresses.
- A set of symbols to represent different voice parameters may be helpful with some children, e.g.:

➤ <u>loud</u>	-	gorilla	<u>quiet</u>	-	ladybird
➤ <u>long</u>	-	caterpillar	<u>short</u>	-	frog
➤ <u>high</u>	-	mosquito (in air)	<u>low</u>	-	cow (lying down)

But be careful to avoid confusions, if you intend to use "concepts" to describe speech sounds e.g. long/short sounds, loud/quiet sounds (Lovel and Dean 1994).

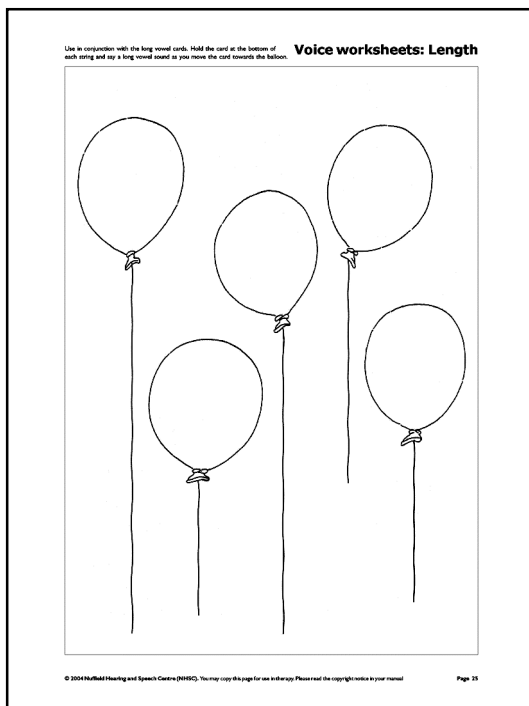
- Begin by introducing a simple contrast e.g. producing a high and low sound, playing with a helicopter/ aeroplane etc. then, as the child develops more control, aim for graded productions e.g. very low - low - slightly higher - high etc. Finally, try to elicit a smooth continuum from one pitch to the next. Speechviewer III can be very useful to support such activities.
- Be aware of the other dimensions of voice quality when working on one particular aspect e.g. make sure when trying to increase length of production that pitch and volume are constant.
- Encourage humming, singing or rhythmic chanting of songs and rhymes. It does not matter whether he manages to get the words or the tune, as long as he begins to use his voice for the length of vocalization demanded by the song, and with some rhythmic pattern.
- These activities should be done for "fun" and in a relaxed way, so that both child and adult can enjoy them. It can be hard for therapists and parents to persevere with this type of work, when the child's response is almost non-existent, and parents may need support and encouragement.

(b) Activities

As a general principle work on length is advised first, then work on volume and finally work on pitch.

Length of Production

- Tightrope. Tie a length of string around two blocks. Use a small teddy or doll to move across the tightrope - the doll only moves when the child uses his voice. Aim to get the doll across in one breath, while producing a long vowel.
- Cotton Reels. Use a reel of cotton or string with a bead at one end. The child pulls the bead, making a vowel sound. See how far the child can move away from the stationary reel.



- Draw a long path. The child is to take an animal/doll home to tea. The child can only move along the path when using his voice. See how many breaths it takes to reach home.