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Dysarthria

Fact Sheet – Speech Disorders

Dysarthria is a disorder of speech muscle tone or co-ordination. It can occur as part of other conditions that affect the brain or muscles. It can range from mild to severe.

Dysarthria can cause speech to sound slurred or slow and can make speech difficult for others to understand.

While dysarthria can make speech sound different, it does not reflect a person's cognitive abilities.

What are the signs of dysarthria?

Dysarthria can affect one or all areas involved in speech production (e.g., articulation, breath support, rhythm, voice, resonance). Signs of dysarthria can vary depending on the type of dysarthria, the cause, and how severe it is. Signs may include:

- Difficulty accurately and quickly moving muscles (e.g., lips, tongue) for speech,
- Slow or imprecise speech,
- Disordered speech nasality (e.g., sounds like a blocked nose)
- Altered rhythm/stress patterns of speech,
- Monotonous speech, i.e., limited range in pitch,
- Limited range of volume (e.g., too quiet, too loud),
- Unusual changes in voice (e.g., breathy, tremulous, or raspy sounding).

To access video examples of dysarthric speech, click the links below:

- Mei et al., 2020: https://onlinelibrary.wiley.com/action/downloadSupplement?doi=10.1111%2Fdmcn.14592&file=dmcn14592-sup-0006-VideoS1.wmv
- Turner et al., 2017: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5344083/bin/supp_88_8_743__index.html

What causes dysarthria?

Dysarthria is caused by conditions that affect the nervous system. Sometimes a condition may cause the muscles to have increased tone (spasticity), or decreased tone (hypotonia). This makes muscles used for speech weak or difficult to coordinate.
Conditions that may cause dysarthria include:

- Brain injury or tumour
- Cerebral palsy

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- Muscular dystrophy
- Stroke
- Brain malformations e.g., polymicrogyria
- Genetic conditions e.g., *DYRK1A*-related condition, Dravet syndrome.

How is dysarthria diagnosed?

Qualified speech pathologists (SPs) (also known as speech-language pathologists, SLPs or speech therapists) can assess your child's speech to determine whether they have dysarthria, another type of speech disorder, or a combination of these. In Australia, a GP, teacher, or other health professionals may refer you to an SP.

Assessments usually involve a number of 'talking tests' and SPs will check how your child moves their mouth, lips, tongue, and how much breath support they have for speaking. SPs will also listen to and examine your child's speech during conversation.

How is dysarthria treated?

Speech pathologists can work with your child and family to determine the best treatment options suited to your child. Treatment may vary depending on the type of dysarthria, how severe it is, and what other strengths and challenges your child is experiencing. Therapies may focus on speech rate, breath support for speech, or improving clarity of sounds.

It may be helpful for your child to see a neurologist, who can investigate the underlying cause of the dysarthria if this is not already known.

Children who are experiencing great difficulty with the production of verbal speech may also benefit from multi-modal forms of communication (e.g., sign language or communication devices). These are also known as augmentative or alternative communication (AAC) options. Many parents are concerned that use of AAC may reduce their child's verbal speech and language development. However, evidence suggests that providing children with more/easier communication options can reduce frustration and will encourage language and speech learning. For example, being able to produce sentences with a digital device is very powerful for a child who has difficulty producing one syllable words and helps support learning of sentence structure and grammar.

Further to speech and language focused therapies, your child may also benefit from seeing:

- **Psychologists**/counsellors, if they are struggling at school with learning or social relationships
- **Occupational therapists/physiotherapists,** if they have fine/gross movement challenges
- **Neuropsychologists**, if they have trouble with attention, memory, or other cognitive areas

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