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Invited commentary for *Developmental Medicine and Child Neurology* on Schoelderle et al., and Veenhuis et al.

TITLE: Recent developments in characterising and classifying dysarthria in children

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## Commentary

Historically, dysarthria research predominantly focused on the characterisation and classification of dysarthria in adults, with considerably less research effort being devoted to determining speech features in children with dysarthria. This is not surprising, given the complexities that come with describing and classifying atypical speech in a group whose motor system is yet to fully develop and mature. More recently though, research in this field has gained momentum and the papers by Schoelderle et al.<sup>1</sup> and Veenhuis et al.<sup>2</sup> augment our growing knowledge of the classification and assessment of dysarthria in children.

Schoelderle and colleagues explored the longstanding issue of whether dysarthria syndromes associated with acquired dysarthria in adults can also be observed in children with dysarthria due to cerebral palsy (CP). Whilst syndrome classification is not without its issues, from a clinical practice point of view, a good classification system can be beneficial for two reasons. Firstly, it can provide a broad description of features one may expect to see in a group, and secondly, it may direct speech and language therapists (SLTs) to relevant treatment targets for this group. However, with dysarthria syndrome allocation being significantly more ambiguous in children than in adults<sup>1</sup>, classifying dysarthria in children on the basis of syndromes established for adults may be of limited clinical utility. For children, in line with the goal of personalised medicine, a needs-based approach to therapy appears warranted to best support the child's speech development.

Assessment tools for dysarthria are important to identify the specific areas in need of support. However, motor speech in children has been identified as an area in which standardised assessments are rarely used by SLTs<sup>3</sup>, which is partially due to the lack of appropriate

assessments. Again, there are welcome developments in this area, with Veenhuis and colleagues<sup>2</sup> using the recently validated pediatric Radboud Dysarthria Assessment (p-RDA) to characterise speech in Dutch children with Ataxia Telangiectasia (A-T). Interestingly, the p-RDA takes into account the developmental factors of speech and primarily relies on identifying the main perceptual features rather than classifying dysarthria type. Validated assessment tools facilitate objective diagnostic and outcome measurement, enabling quantification of therapy progress and comparison of children's performance. A new dysarthria assessment has also been developed for German-speaking children (BoDyS-KiD)<sup>4</sup>, highlighting the ongoing efforts in the field to enhancing the way we evaluate the speech of children with dysarthria.

Despite these encouraging developments, more research is needed to gain a greater understanding of children's differential developmental trajectories of speech in the context of dysarthria. Both research groups assessed each child's speech at one time point, preventing quantification of the children's performance over time. Research is required that measures potential changes of speech over time to obtain valuable insights into developmental processes in children with dysarthria and their interaction with the underlying pathology. Childhood dysarthria is a symptom of various aetiologies. Schoelderle et al. investigated dysarthria in children with CP, a permanent movement disorder that can be considered stable albeit not unchanging. In comparison, A-T is a progressive disorder, with children developing speech in a degenerative context. This has clear implications for the developmental trajectories of speech in these groups of children, highlighting the value of longitudinal studies to advancing our knowledge of childhood dysarthria.

In summary, both papers make important and welcome contributions to our understanding of the classification and assessment of dysarthria in children. Both research groups have collected a wealth of speech data with vast potential for further investigation of specific features of speech. I look forward to both research groups' future work in this field.

Word count: 586

## References

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