
This version is available at https://strathprints.strath.ac.uk/55175/

**Strathprints** is designed to allow users to access the research output of the University of Strathclyde. Unless otherwise explicitly stated on the manuscript, Copyright © and Moral Rights for the papers on this site are retained by the individual authors and/or other copyright owners. Please check the manuscript for details of any other licences that may have been applied. You may not engage in further distribution of the material for any profitmaking activities or any commercial gain. You may freely distribute both the url (https://strathprints.strath.ac.uk/) and the content of this paper for research or private study, educational, or not-for-profit purposes without prior permission or charge.

Any correspondence concerning this service should be sent to the Strathprints administrator: strathprints@strath.ac.uk
The aim of this study was to investigate the variability of jaw movements in lateral direction in children with speech sound disorders (SSD). The development of jaw stability is an important aspect in speech motor control and the question of the current study was to estimate the contribution of lateral movement to (in)stability. Articulographic data were collected on the reiterated productions of the words /spa:/ and /pa:s/ of 7 four-to-six-year-olds with SSD (4 phonetic articulation disorder [PAD], 2 phonological disorder [PD] and 1 childhood apraxia of speech [CAS]) and 24 four-to-seven-year-old normally speaking children using an optical 3D movement analysis system. Results of earlier studies showed that in the midsagittal plane articulatory movement trajectories become more stable with age and during linguistic/phonemic development. First analyses of movement stability in the coronal plane corroborate these results. Furthermore, a first comparison between speech disorders showed variability of jaw movement trajectories in the coronal plane to be the highest for the child diagnosed with CAS. Regarding the effect of syllabic structure, results show large differences in lateral jaw stability between /spa:/ and /pa:s/ for the children diagnosed with PD and CAS, but not for PAD and controls. These preliminary results are promising for the profiling of SSD.