

Lateral jaw stability in children with developmental speech disorders
H. Terband, Y. van Zaalen, S. Hommeles, A. Martens,
N. Savelkoul, & B. Maassen

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.