

Supplementary Table S1: Overview of applied speech measurements.

Feature name	Abbreviation	Definition	Pathophysiological interpretation with respect to dysarthria
Timing			
Rate of speech timing	RST	Rate of voiced, unvoiced and pause intervals measured as the slope of the regression line of total interval count per time. Each interval was described as mean time between onset and offset of interval.	Hypokinetic movements of speech apparatus lead to reduced stream of voiced, unvoiced and pause intervals.
Acceleration of speech timing	AST	Mean difference between RST of a segment parted in two halves with 25% overlap.	Acceleration of speech rate is achieved at the expense of reduced RST.
Duration of pause intervals	DPI	Median length of pause intervals.	Hypokinesia of speech apparatus makes initiating of speech difficult, leading to prolonged pause intervals.
Entropy of speech timing	EST	Shannon information entropy was computed from the frequency of voiced, unvoiced, pause and respiration intervals.	Increased orderliness and predictability of pathological speech results in decreased entropy and lower variation of timing.
Articulation			
Duration of unvoiced stops	DUS	Median length of unvoiced stop consonants identified from the bimodal distribution of length of unvoiced stop consonants and unvoiced fricatives using an Expectation Maximization algorithm.	Period of stop consonants is prolonged by friction-like noise of insufficiently closed articulators.
Decay of unvoiced fricatives	DUF	Mean difference between the second Mel-frequency cepstral coefficients, associated with the ratio between energies of low and high Mel-frequency bands, of unvoiced fricatives weighted on squared duration of speech which was divided in two halves with 25% overlap.	Temporal decrease of range of articulatory movement is manifested by loss of high-frequency energy in unvoiced fricatives.
Phonation			
Duration of voiced intervals	DVI	Mean length of voiced intervals.	Incomplete or unperformed closure of vocal folds leads to longer voiced intervals and voicing leakage through inter and intra-word pauses.
Gaping in-between voiced intervals	GVI	Rate of clear pauses between voiced intervals. Clear pause is a gap between two voiced intervals containing no consonant or respiration. Formal pauses were excluded from the bimodal distribution of length of clear pauses using an Expectation Maximization algorithm.	Deteriorated ability to properly stop vocal fold vibration.
Respiration			
Rate of speech respiration	RSR	Number of respirations per unit time.	Rigidity of respiratory muscles, respiratory dyskinesia or posture issues are related to increased respiratory rate.
Pause intervals per respiration	PIR	Median number of pauses between respirations.	Impaired ability to stop respiratory airflow manifests as decreased pause production.
Relative loudness of respiration	RLR	Median of loudness measured relatively between respirations and speech as difference in logarithmic scale.	Hypokinesia of respiratory muscles and decreased range of rib cage motion make respiration quieter.
Latency of respiration exchange	LRE	Mean duration between end of speech and start of respiration.	Rigidity and bradykinesia of respiratory muscles causes higher latency of exchange between expiration and inspiration.