



Articulation accuracy and speech rate predict meaningful progression in PAOS.

Articulation Accuracy v. Speaking Rate as Predictors of Clinically Meaningful Change in PAOS

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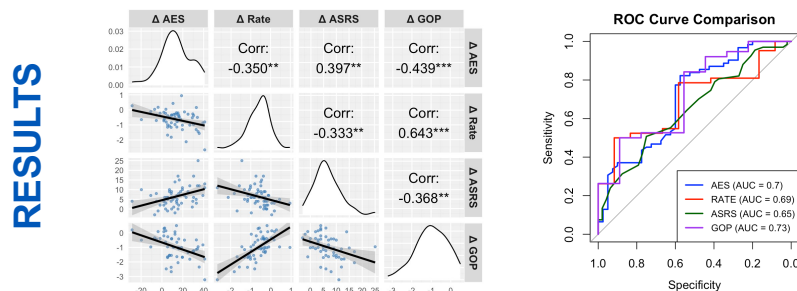
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BACKGROUND

- Sensitive and clinically meaningful quantitative outcome measures are critical for detecting disease progression and therapeutic response in degenerative disease, including progressive apraxia of speech (PAOS).
- While articulation accuracy and speaking rate are commonly affected in PAOS, it remains unclear whether they equally contribute to clinically meaningful change over time. Identifying measures most closely aligned with perceived disease progression could inform outcome measure selection for clinical trials.
- The objective was to compare the relationship of articulation accuracy and speaking rate with overall severity (on the Apraxia of Speech Rating Scale-v3) and with clinically meaningful progression, defined as ≥ 1 -point change on a 10-point speech-language pathologist-rated Motor Speech Disorder Severity Rating scale (MSDSR) that reflects how well speech is understood.

METHOD

- 40 individuals with PAOS and 35 controls completed 2 annual assessments.
- Articulation accuracy was quantified using the Articulatory Error Score Index (AES) and objectively with Goodness of Pronunciation (GOP). Speaking rate was calculated from productions of *catastrophe* (syllables/ second).
- Associations among measure changes were viewed with Pearson's correlations.
- Receiver operating characteristic (ROC) analyses compared the ability of the measures to classify individuals demonstrating clinically meaningful progression.



CONCLUSION

All measures (AES, speaking rate, ASRS, and GOP) demonstrate equivalent ability to detect clinically meaningful communication decline on the MSDSR, supporting their use as outcome measures for longitudinal monitoring and therapeutic trials. Future work should focus on exploring combinations of these measures to improve sensitivity and specificity for detecting change.