

Sandra Weintraub

Primary Progressive Aphasia (PPA): Northwestern Anagram Test (NAT) English, Italian and German Versions

Grammar is the most difficult aspect of PPA to measure. Impairments of morphology and syntax are laborious to quantitate, can be conflated with impairments of fluency, and need to be adapted to different languages. The NAT was created for American English speakers to distinguish between dysfluency and agrammatism by testing grammatical “production” bypassing interference from motor speech disorders. The NAT requires ordering word cards to create a sentence describing the activity in a stimulus picture. Canonical (e.g., simple active affirmative declarative) and non canonical (e.g., object relative) sentence structures are tested, and simplified vocabulary (e.g., boy, girl, carry) is used to minimize the impact of lexical complexity on performance. Since its initial creation in 2009, the test more recently has been translated into Italian and German for use in these languages with adaptations to suit each language’s grammatical characteristics. The Italian version was shown to differentiate between logopenic and agrammatic PPA and performance was correlated with left inferior frontal and anterior corpus callosum atrophy. The German version demonstrated accurate performance in patients with right hemispheric stroke and impaired performance in those with left hemispheric stroke on tests differing in verb and sentence level complexity. The German version also included a translation of the Northwestern Assessment of Verbs and Sentences (NAVS), a psycholinguistic battery to improve in depth testing of grammar comprehension and production. The NAT provides a valid way to test grammar in English, Italian and German and can be used in patients with limited speech output.

