Prostate cancer primarily occurs in older men, with a mean age of 66 years at diagnosis; therefore, age-related comorbidities are common (Nguyen et al., 2015). Androgen-deprivation therapy (ADT) is used to treat prostate cancer throughout the disease trajectory by reducing testosterone to castration levels. Results related to the cognitive trajectory of men receiving ADT for prostate cancer remain mixed (Ryan et al., 2020). Estimates of treatment-related cognitive decline range from 47% to 69%, and cognitive decline may significantly affect functioning, ability to live independently, and quality of life (Gonzalez et al., 2015; Mundell et al., 2017; Nelson et al., 2008). With new interventions demonstrating the potential for overcoming negative cognitive and other effects of ADT, early identification of treatment effects on cognition is increasingly important (Manson et al., 2019). No standard of care exists for the assessment of cognitive changes in cancer survivors. Existing methods include the use of self-report measures, which may trigger follow-up assessments that involve a complex battery of abstract neurocognitive tests. This testing is conducted by trained psychometricians over two or more hours and may increase anxiety about cognitive abilities in older adults (Williams et al., 2014).

Because language production depends on intact function in a number of cognitive domains, spoken language reflects cognition that can be ascertained in everyday speech by measuring the complexity of grammar and vocabulary, as well as idea density in spoken language (Chen et al., 2009; Fernández & Cairns, 2010). Psycholinguistics and neurolinguistics—scientific disciplines that involve studying the psychological and neurobiologic factors linking cognition with language production and the effects of neurologic disorders on language—provide strategies designed to evaluate cognition as reflected...