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The role of the speech-language therapist/pathologist in primary  
progressive aphasia

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23 **Abstract**

24           In recent years, the role of the speech-language therapist/pathologist (SLT/P) has become  
25 increasingly established in the assessment, care, and management of primary progressive aphasia  
26 (PPA). Throughout the progression of the condition, the SLT/P's role encompasses five notable  
27 domains: behavioral assessment, impairment-based intervention, compensatory strategy  
28 intervention, communication partner training, and informational counseling. The SLT/P brings a  
29 unique perspective and clinical arsenal to address the linguistic, functional, and psychosocial  
30 effects that PPA can have on a person's life. Ongoing training opportunities are warranted to  
31 deliver evidence-based and person-centered SLT/P services to people living with PPA.  
32 Therefore, in this commentary, our aim is to clarify the SLT/P's role to advocate for our patients  
33 and their options for care.

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46 **Introduction**

47       The speech-language therapist/pathologist (SLT/P)<sup>1</sup> plays a crucial role in the  
48 assessment, care, and management of primary progressive aphasia (PPA)<sup>2-4</sup>. While the language-  
49 led changes in PPA are progressive, much can be done to support and manage the effects of the  
50 condition. Here, the SLT/P can provide clinical services that are particularly suited to the unique  
51 manifestations of communicative decline in dementia<sup>1</sup>. SLT/Ps have a long history of supporting  
52 people with progressive disease, including but not limited to amyotrophic lateral sclerosis,  
53 Huntington’s disease, Parkinson’s disease, and multiple sclerosis<sup>5</sup>. Surprisingly, people with  
54 PPA have been comparably neglected, where there are documented discrepancies in the number  
55 of PPA patients receiving referrals relative to those who qualify for them<sup>6,7</sup>. Here, to reduce this  
56 service gap, we detail the SLT/P’s scope of practice as it relates to PPA.

57 **Diagnostic characterization and classification of symptoms**

58       Comprehensive examination of language function is essential to provide insight on  
59 impairments, relative strengths, and to infer a likely diagnosis of PPA<sup>8</sup>. Clinical subtyping of  
60 PPA into the nonfluent, semantic, and logopenic variants of PPA relies upon careful evaluation  
61 of features of language function<sup>9</sup>. Recent studies of speech and language features in PPA support  
62 the clinical sensitivity of behavioral measures—ranging from the Cambridge Semantic Battery<sup>10</sup>  
63 to evaluations of motor speech<sup>11</sup> to informativeness of language output<sup>12</sup>—for this population.  
64 SLT/Ps have the clinical expertise to evaluate domains of speech, language, and communication  
65 beyond the restrictions of standardized assessments and to interpret these results appropriately  
66 (e.g., such as by examining semantic processing beyond picture-word matching and instead  
67 through multimodal tasks [using gesture, mime, pictures, or objects] with limited linguistic  
68 demands; for example, gesturing the use of a spoon when provided with a photo of one). Beyond

69 establishing a diagnosis, within an assessment, the SLT/P can quickly determine which level of  
70 support a person may benefit from to increase their performance accuracy. In a picture naming  
71 task for the stimulus “popcorn”, hierarchical cueing can begin at the level of sound (e.g., “It  
72 begins with /p/”), grapheme (e.g., a “P” on a piece of paper), semantic (e.g., “We often eat it at  
73 the movies.”), or gestural (e.g., moving your hand in a sweeping motion from an invisible bag to  
74 your mouth and chewing). For each cue type, the level of support can be adjusted to best suit the  
75 person’s needs. This dynamic form of assessment (1) reveals patterns of speech and language  
76 difficulties required for a diagnosis, (2) speaks to the likely progression of communicative  
77 decline, (3) can help patients and their families understand the condition, and (4) allows the  
78 SLT/P to formulate appropriate clinical recommendations.

### 79 **Therapeutic impairment-based intervention**

80 As foreshadowed above, assessment is the inception of rehabilitative SLT/P services<sup>13</sup>.  
81 The relationship between these two processes is and should be symbiotic: assessment informs  
82 intervention targets and intervention informs the outcomes in return. There is a misconception  
83 that progressive conditions are ineligible for rehabilitative care. As a result, people living with  
84 PPA may be precluded from SLT/P services<sup>6,7</sup>. If a patient chooses to pursue therapy beyond  
85 initial evaluation, a SLT/P can offer an impairment-based model to target goals<sup>15</sup>. This option  
86 targets improvement—consistent with what the term “rehabilitation” typically evokes—or, in the  
87 case of progressive aphasia, maintenance. Naming, an indispensable feature of efficient  
88 communication, is a hallmark challenge in PPA. Naming-based interventions can have  
89 restorative effects, where results appear most beneficial during the milder stages of condition<sup>4,14-</sup>  
90 <sup>16</sup>. Similarly, script training is proving to be a valuable approach for the nonfluent variant to  
91 maintain and improve fluency and grammatical well-formedness<sup>7</sup>. Given the heterogeneity within

92 a PPA diagnosis<sup>9</sup>, a stage-based approach is not validated, however, impairment-based  
93 approaches are likely more effective when initiated early<sup>16</sup>. A person-centered approach,  
94 whereby treatment is shaped by joint decision-making, has been advocated by people with  
95 PPA<sup>17-19</sup>, their families<sup>17,18</sup> and expert SLT/Ps<sup>1,13,20</sup>. The process of joint decision-making begins  
96 when the SLT/P incorporates concepts that the patient identifies as important, and ensures that  
97 intervention outcomes, even when limited, are beneficial and transferable to daily acts of living.

### 98 **Compensatory and strategy-based intervention**

99         The overarching goal of PPA intervention is to improve life participation<sup>17</sup>. The relentless  
100 decline necessitates practical and person-centered targets<sup>1,13,18,19</sup>. When restorative approaches  
101 become increasingly incompatible with a patient's wants and needs, a compensatory approach  
102 can be taken in parallel; in fact, employing non-restorative communication strategies at the  
103 inception of intervention provides immediate opportunities for improved communication and life  
104 participation. For example, as naming becomes more challenging, a patient can employ a range  
105 of methods to effectively convey target words, including but not limited to circumlocution (e.g.,  
106 describing a concept's pertinent features or purpose), writing, drawing, gesturing, using pictures,  
107 or playing pre-recorded messages. Augmentative and Alternative Communication (AAC)  
108 devices can ameliorate communication breakdowns<sup>20,21</sup>, with options ranging from high tech  
109 (e.g., a personalized smartphone application) to low tech (e.g., a paper booklet with fifteen  
110 pictures of crucial information). In this therapeutic approach, it is the SLT/P's responsibility to  
111 determine and train feasible strategies for a patient to complement their current and future  
112 communication<sup>1</sup>. The focus shifts to maximizing functional communication. Collaboratively  
113 examining barriers to communication can generate novel solutions, such as a laminated  
114 pictographic map of a person's daily walk for them to reference.

115 **Communication partners and support groups**

116 Functional communication is the product of speaker, environment, and communication  
117 modality. While we have spoken to the speaker (the person with PPA) and modality (verbal,  
118 visual, or gesture-based expression), we have yet to address the role of the environment, or  
119 communication partners, in the success of a conversation. The SLT/P can address this issue in  
120 two distinct ways: (1) providing communication partner training and (2) facilitating groups  
121 intended for people with PPA and/or their communication partners. Often implemented in dyads,  
122 communication partner training consists of structured programs<sup>22-23</sup> that aim to enhance  
123 interactions by identifying behaviors that obstruct conversations and training strategies to  
124 mitigate their effects<sup>22,23</sup>. Whether in-person or virtual, local and national<sup>24</sup> support groups led by  
125 SLT/Ps facilitate connections for communities affected by PPA and provide further practice  
126 opportunities.

127 **Informational counseling**

128 The role of the SLT/P also entails one-on-one and partner-based counseling to address  
129 the emotional and educational needs resulting from a diagnosis and subsequent management of  
130 the condition. A diagnosis of PPA compels significant shifts in personal identity, relationships,  
131 occupational roles, and daily activities of living, and as such, informational counseling is a  
132 pertinent tool for both people living with the condition and those in their direct community<sup>25</sup>.  
133 While symptoms are initially restricted to specific language functions, the progressive decline  
134 can quite instantly seep into a person's social, professional, and community participation.  
135 SLT/Ps have the clinical training and expertise to identify the ways in which PPA can affect  
136 behavior and communicative abilities and can therefore provide clinically-informed counseling.  
137 Throughout the care journey, counseling empowers patients and their communities by providing

138 accessible explanations of the condition, recognizing its insidious effects, clarifying the provider  
139 team, and introducing concrete strategies to increase engagement and autonomy, problem-  
140 solving, and psychosocial support for the acceptance and management of future expectations. As  
141 the condition evolves and caregiving demands increase, intensified support for community  
142 partners will likely be needed.

### 143 **An evolving role**

144         The role of the SLT/P will evolve as we gain evidence of the SLT/P's impact from  
145 clinical trials. In response to these outcomes, training materials and opportunities for ongoing  
146 education must be cultivated for future and current SLT/Ps to deliver care that meets the needs of  
147 this community. International efforts are required to create accessible and generalizable practice  
148 principles and educational resources for SLT/Ps new to this population. Recently, the formation  
149 of the International PPA SLT/P network<sup>1</sup> has resulted in collaborations across Australia, Canada,  
150 Chile, Hong Kong, India, Norway, Spain, Switzerland, the United States, and the United  
151 Kingdom. A recent outcome of this initiative was the creation of best practice principles for  
152 SLT/Ps working with PPA<sup>1</sup>. Future work of this network includes the creation of a SLT/P  
153 registry for PPA and identification of training needs, with the ultimate aim of improving the PPA  
154 patient experience of identifying, receiving, and benefitting from SLT/P services.

### 155 **Conclusion**

156 The role of the SLT/P in PPA is imperative to support people living with PPA across all stages of  
157 this condition. There is an urgent need for early and frequent referral to SLT/P services for this  
158 community, with frequent review (and re-referral if required) to promote maximal benefit from  
159 these services. We hope to have illustrated the indispensable nature of this SLT/P in the  
160 assessment, care, and management of this condition. A repertoire of evidence-based restorative

161 interventions for PPA remains to be established to shape procedures of assessment, decision-  
162 making, and informational counseling. These tools will enable patients and their families to  
163 make informed decisions—together—about the support that will benefit them most. Methods to  
164 revise current infrastructures to promote the role of the SLT/P in PPA also remain to be enacted.  
165 The practical implications of this statement are the necessity to (1) heighten awareness of the  
166 SLT/P’s clinical expertise and function in working with PPA, (2) connect patients with SLT/Ps  
167 through the means of a registry and referrals, and (3) provide ongoing educational opportunities  
168 for SLT/Ps, neurologists, and neuropsychologists to collaboratively meet the needs of these  
169 shared patients.

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