

## Appendix

Author(s)	Title	Year	Aim of the study	Type(s) of verbal fluency test(s) used	Results
Azuma et al.	Comparing the difficulty of letter, semantic, and name fluency tasks for normal elderly and patients with Parkinson's disease.	1997	To investigate the relationship between PD, dementia, and verbal fluency	Semantic, letter (phonemic), and name fluency	Persons with deteriorating cognitive status in PD do not use the same strategies as persons with PD but without dementia and controls
Barbosa et al.	Cognitive or Cognitive-Motor Executive Function Tasks? Evaluating Verbal Fluency Measures in People with Parkinson's Disease.	2017	To describe the performance of PD patients and controls on verbal fluency, executive function, and oral diadochokinesia tests	Phonemic and semantic fluency	Persons with PD had more difficulties than controls in the tests
Bayram & Akbostanci.	Verb naming fluency in hypokinetic and hyperkinetic movement disorders.	2018	To investigate action language in population of persons with PD	Phonemic, semantic, and action fluency	Participants in different groups performed similarly in all of the fluency tasks, and mean action content of the verbs

					produced in action fluency did not differ between groups
Ellfolk et al.	Striatal volume is related to phonemic verbal fluency but not to semantic or alternating verbal fluency in early Parkinson's disease.	2014	To study gray matter volumes of MRI images in relation to semantic, phonemic, and alternating verbal fluency in PD	Semantic, phonemic, and alternating semantic fluency	Performance was worse for persons with PD on the alternating fluency task but similar on phonemic and semantic tasks
Flowers et al.	Some characteristics of word fluency in Parkinson's disease.	1995	To investigate different characteristics of verbal fluency in PD	Letter (phonemic) and semantic fluency	There are problems like anomia in PD but there is no problem with vocabulary itself
Gurd.	Verbal fluency deficits in Parkinson's disease: Individual differences in underlying cognitive mechanisms.	2000	To investigate individual differences associated with verbal fluency in PD	Semantic and alternating semantic fluency	There may be differences from person to person
Hamada et al.	Qualitative Deficits in Verbal Fluency in Parkinson's Disease with	2021	To investigate the accuracy of different strategies (such as clustering and switching)	Semantic and phonemic fluency	Patients with PD-MCI named fewer words and switched less frequently in

	Mild Cognitive Impairment: A Clinical and Neuroimaging Study.		in verbal fluency and their correlates with functional imaging in PD-MCI		phonemic and semantic fluency tasks
Hedman et al.	Word-finding difficulties in Parkinson's disease: Complex verbal fluency, executive functions and other influencing factors.	2022	To examine if persons with PD differ in performance on different types of fluency tests compared with controls	Phonemic and semantic (with two features, e.g., "name things that are round and flat") fluency in relation to executive function	Semantic fluency scores are lower in PD population but no other scores
Herrera et al.	Verbal fluency in Parkinson's disease patients on/off dopamine medication.	2012	To investigate how dopamine medication affects verbal fluency in PD	Phonological (phonemic), semantic, and action fluency	PD patients off medication perform significantly worse than other compared groups
Koerts et al.	What is measured with verbal fluency tests in Parkinson's disease patients at different stages of the disease?.	2013	To understand what exactly is measured with verbal fluency tests in PD, particularly at different stages of PD	Semantic and phonemic fluency	Different cognitive functions are associated with verbal fluency tasks at different stages of PD
Piatt et al.	Lexical, semantic, and action verbal fluency in Parkinson's disease with	1999	To compare different types of verbal fluency tests in patients with and without	Semantic and action fluency	Action fluency might be sensitive in dementia and act as an

	and without dementia.		dementia and controls		early indicator of dementia developing
Rodrigues et al.	Action verbal fluency in Parkinson's patients.	2015	To compare the performance of patients with PD and controls in an action fluency task	Semantic, phonemic, and action fluency	Action fluency is considered a valid executive function measure but it may be associated with linguistic parameters
Romann et al.	Different outcomes of phonemic verbal fluency in Parkinson's disease patients with subthalamic nucleus deep brain stimulation.	2017	To study the relationship between phonemic fluency and STN-DBS	Phonemic fluency	The effect of bilateral STN-DBS is of no expected pattern, and the results for patients on STN-DBS might worsen as well as improve
Signorini & Volpato.	Action fluency in Parkinson's disease: a follow-up study.	2006	To investigate the connection between action fluency and signs of dementia	Semantic, letter (phonemic), and action fluency	Impairments in action fluency should not be considered signs of dementia
Suhr & Jones.	Letter and semantic fluency in Alzheimer's, Huntington's,	1998	To study letter and semantic fluency in Alzheimer's, Huntington's	Letter (phonemic) and semantic fluency	There are no unique mistakes in verbal fluency tests

	and Parkinson's dementias.		and Parkinson's dementias		in different dementia types
Yang et al.	Semantic fluency deficits and associated brain activity in Parkinson's disease with mild cognitive impairment.	2022	To study semantic fluency in PD-MCI, PD-NC, and non-PD	Phonemic and semantic fluency and semantic switching (alternating semantic fluency)	Semantic fluency relies on major neural network
Zec et al.	A comparison of phonemic, semantic, and alternating word fluency in Parkinson's disease.	1999	To investigate different types of fluency in PD	Phonemic, semantic, alternating semantic, and alternating phonemic fluency	PD participants have the most difficulties with alternating fluency while phonemic fluency is the easiest for them