

# PDCogniCare

## Category Fluency

		
Copyright Status	Domain Assessed	Administration Time
Unlicensed	Fluency	One Minute

### Description

Verbal fluency tests require examinees to generate as many words as they can within one minute adhering to a specific category (category fluency)<sup>27</sup> or a specific first letter (letter fluency).<sup>28</sup> Clients are scored on how many correct unique words are generated in one minute. While category and letter fluency tests are endorsed by the MDS for use in both PD-MCI and PDD,<sup>4, 29</sup> only category fluency is included in the PDCogniCare Cognitive Assessment Battery due to its unique sensitivity to cognitive decline in PD.<sup>15</sup>

### Training and Administration

Clients are given one (1) minute to name as many words as they can within a particular category, such as animals, fruits, or vegetables. Responses provided by the client should be recorded on paper and via an audio recording (where possible) for cross-checking purposes.

### Scoring

Scoring is completed by counting the number of unique items generated.

For category fluency, all types of animals are accepted, including humans, insects, extinct, prehistoric, or mythical. The number of correct words scored should not include:

1. Higher order categories when specific animals are named – for example, ‘fish’ followed by ‘salmon’ and ‘trout’ – total words generated = 3; correct words = 2
2. Different sex/genders are given for the same type of animal – for example, ‘deer’ followed by ‘doe, fawn, stag’ scores only 1 point
3. Repetitions
4. Proper nouns
5. Word variations – for example, ‘fish’ followed by ‘fishes’ scores only 1 point



Validated in PD



Validated for  
telehealth



Alternative versions  
available

### Alternative Versions

Common categories include: animals, fruit and vegetables, and transport.<sup>30</sup>

### PD Considerations

Fluency measures rely on rapid speech output. Dysarthria is a common motor speech disorder in PD that can result in slowed speech.<sup>31</sup> The presence of both mild and moderate dysarthria has been associated with decreased verbal fluency in PD, and as such verbal fluency scores may be underestimated in people who present with dysarthria.<sup>32</sup> Where dysarthria is present or suspected, assessors may seek to clarify responses when administering verbal fluency tests and consider controlling for dysarthria statistically to account for its effect on test performance.<sup>32</sup>

### Telehealth

Category fluency has demonstrated moderate reliability for direct-to-home videoconference administration in people living with PD.<sup>33</sup> When completed via phone call or videoconferencing, fluency measures have demonstrated comparable reliability to in-person administration within a large cohort of older adults with or without cognitive impairment.<sup>22</sup>



### Psychometric and Normative Data

Normative data is shown in Table 4.<sup>34</sup>

Table 4 Normative data for Category Fluency

Test	Age group	n	Mean (SD)
<b>Category fluency</b>	50–59	161	17.5 (4.9)
	60–69	205	16.9 (5.0)
	70–79	179	13.8 (4.6)
	80–89	103	12.1 (4.2)
	≥90	17	8.8 (3.6)

Psychometric data for PD-MCI is shown in Table 5<sup>35</sup>

Table 5 Psychometric data for Category Fluency

	Cutoff	Sensitivity	Specificity	PPV	NPV	AUC (95%CI)
<b>Category Fluency (three categories)</b>	<44	74	53	40	82	0.7 (0.55 - 0.75)