

Measures for Stages of Dementia

Care professionals working with persons living with dementia often discuss dementia in terms of its stages. These stages refer to different points in the progression of a person's dementia

Determining the stage of dementia is important in research and clinical practice as it helps researchers and clinicians monitor the effectiveness of pharmacological and psychosocial interventions, and decide the most appropriate intervention for the person living with dementia.

Rather than simply using mild/early stage, moderate/middle stage, and severe/late stage dementia as descriptors, scales have been developed to provide more specific descriptors of the progression of a person's condition, each having a more comprehensive description of several symptoms. Scales to decide the stage of dementia are a common point of reference that aid communication in a multidisciplinary team that supports the person living with dementia in their care journey. These scales can help the team to better understand and prepare for how symptoms change over the different stages.

The psychometric properties of several clinical staging scales for dementia were compared and evaluated in a systematic review.¹ It is important for dementia staging instruments to have:

- Discriminatory validity: Power to differentiate distinct groups of persons living with dementia at different levels of cognitive, behavioural and functional abilities; and
- Predictive validity: Power to estimate the duration in which a person living with dementia will remain in a specific stage, and to predict when the next stage may begin.¹

Results from the systematic review however, showed that no one staging scale has consistent, strong evidence of excellent psychometric properties, applicable in the entire course of dementia, and most widely-used in various cultural settings.¹

The table below summarises 3 established dementia staging instruments widely used in the Singapore context:

Tool	About the Instrument	Strengths & Limitations	Psychometric Properties	Permission to Use
Clinical Dementia Rating ² (CDR) Click here for more information about the instrument.	A 5-point system based on a person's cognitive ability and how they function	Strengths: <ul style="list-style-type: none"> • Best-evidenced scale • Studied from an international perspective • Widely used in dementia research • Available in 14 languages • Count scores from formalized cognitive or functional performance testing • Scored the highest in validity testing amongst the instruments listed in this document Limitations: <ul style="list-style-type: none"> • Takes a longer time to administer relative to other scales (around 20 to 40 minutes) 	Reliability: Multiple studies have reported: <ul style="list-style-type: none"> • High percentage agreement between raters, 85%;³ and • High interrater agreement between clinical nurse specialists and physicians for the presence and severity of dementia, $k = .75$.⁴ Validity: Multiple studies have reported: <ul style="list-style-type: none"> • Concurrent validity correlations range from .30 to .70; and • Very strong discriminant validity.¹ 	Prospective users of the CDR should be trained to administer the semi-structured interview and use the Scoring Table in a valid, reliable manner. Reprinting of the CDR Scoring Table and rules, which were published in this article ² , requires permission from the publisher, Lippincott, Wilkins & Williams. A license must be obtained to use the CDR. To license the CDR (non-profit and for-profit), please refer to the following link: https://otm.wustl.edu/washu-innovations/tools/ .

Tool	About the Instrument	Strengths & Limitations	Psychometric Properties	Permission to Use
<p>Functional Assessment Staging Test⁵ (FAST)</p> <p>Click here for the journal article.</p> <p><i>The article lists the descriptions for the different stages.</i></p>	<p>A 7-stage system based on a person's level of functioning and ability to perform activities of daily living (ADLs)</p>	<p>Strengths:</p> <ul style="list-style-type: none"> • Most commonly used in Singapore • Easy and quick to stage (approximately 2 minutes) • Best studied for reliability and showed good to excellent reliability results <p>Limitations:</p> <ul style="list-style-type: none"> • Rely more on history taken from persons living with dementia and/or their caregivers, and completed merely by information available through professional observations of care delivery or during an interview 	<p>The FAST is reliable and valid in evaluating functional deterioration in persons with Alzheimer's Disease throughout the entire course of the condition:</p> <ul style="list-style-type: none"> • Excellent reliability: <ul style="list-style-type: none"> ○ Rater consistency (fixed effect Intraclass Correlation Coefficient [ICC]) was 0.86 ($p < .01$); and ○ Rater agreement (random effect ICC) was 0.87 ($p < .01$).⁶ • Excellent concurrent validity (FAST test was compared to the Ordinal Scales of Psychological Development [OSPD]): <ul style="list-style-type: none"> ○ Pearson product moment correlation coefficients between FAST levels and each OSPD subtest ranged from -0.60 to -0.79 ($p < .001$); and ○ Pearson correlation coefficient between FAST test and total OSPD test score was at -0.79 ($p < .001$).⁶ 	<p>Cite the developers to use the scale. No other permissions are required.</p>

Tool	About the Instrument	Strengths & Limitations	Psychometric Properties	Permission to Use
<p>Global Deterioration Scale⁷ (GDS)</p> <p>Click here to access the scale, and here for the journal article.</p>	<p>A 7-stage system based on the amount of cognitive decline</p>	<p>Strengths:</p> <ul style="list-style-type: none"> • Takes only 2 minutes to complete once relevant clinical information has been collated • Validated against results from biomarker studies • Mainly used in research or service development to categorise persons living with dementia by their severity <p>Limitations:</p> <ul style="list-style-type: none"> • May not be sensitive enough to pick up subtle changes in a person living with dementia 	<p>Reliability:</p> <ul style="list-style-type: none"> • Good to excellent interrater reliability, ranging from .82 to .92.⁸ <p>Validity:</p> <ul style="list-style-type: none"> • Validated twice against biomarkers – GDS correlated significantly with: <ul style="list-style-type: none"> ○ Computerized Tomography (CT) scan rankings of ventricular dilation ($r = .62$); and ○ CT scan-based assessments of sulcus enlargement ($r = .53$). 	<p>Cite the developers to use the scale. No other permissions are required.</p>

References

1. Olde Rikkert, M. G. M., Tona, K. D., Janssen, L., Burns, A., Lobo, A., Robert, P., Sartorius, N., Stoppe, G., & Waldemar, G. (2011). Validity, reliability, and feasibility of clinical staging scales in dementia: A systematic review. *American Journal of Alzheimer's Disease & Other Dementia*, 26(5), 357-365. <https://doi.org/10.1177/1533317511418954>
2. Morris, J. C. (1993). The Clinical Dementia Rating (CDR): Current version and scoring rules. *Neurology*, 43(11), 2412-2412. <https://doi.org/10.1212/WNL.43.11.2412-a>
3. Fagundes Chaves, M. L., Camozzato, A. L., Godinho, C., Kochhann, R., Schuh, A., de Almeida, V. L., & Kaye, J. (2007). Validity of the clinical dementia rating scale for the detection and staging of dementia in Brazilian patients. *Alzheimer Disease & Associated Disorders*, 21(3), 210-217. doi: 10.1097/wad.0b013e31811ff2b4
4. McCulla, M. M., Coats, M., Van Fleet, N., Duchek, J., Grant, E., & Morris, J. C. (1989). Reliability of clinical nurse specialists in the staging of dementia. *Archives of Neurology*, 46(11), 1210-1211. doi:10.1001/archneur.1989.00520470070029
5. Reisberg, B. (1988). Functional assessment staging (FAST). *Psychopharmacology Bulletin*, 24(4), 653-659.
6. Sclan, S. G., & Reisberg, B. (1992). Functional assessment staging (FAST) in Alzheimer's disease: reliability, validity, and ordinality. *International Psychogeriatrics*, 4(03), 55-69. doi: 10.1017/s1041610292001157.
7. Reisberg, B., Ferris, S. H., de Leon, M. J., & Crook, T. (1982). The Global Deterioration Scale for assessment of primary degenerative dementia. *The American Journal of Psychiatry*, 139(9), 1136-1139. doi: 10.1176/ajp.139.9.1136
8. Eisdorfer, C., Cohen, D., Paveza, G. J., Ashford, J. W., Luchins, D. J., Gorelick, P. B., Hirschman, R. S., Freels, S. A., Levy, P. S., Semla, T. P., & Shaw, H. A. (1992). An empirical evaluation of the Global Deterioration Scale for staging Alzheimer's disease. *The American Journal of Psychiatry*, 149(8), 190-194. doi: 10.1176/ajp.149.2.190