

Instrument	Delirium Rating Scale – Revised-98 NOTE: This card is populated with information from the instrument’s original validation study only.	
Acronym	DRS-R-98	
Primary use	Delirium Severity	
Area assessed (Number of questions)	16 items total	
	3 items for diagnosis: Temporal onset of items; Fluctuation of symptom severity; Physical disorder	13 items for severity: Sleep-wake cycle disturbance; Perceptual disturbances and hallucinations; Delusions; Lability of affect; Language; Thought process abnormalities; Motor agitation/retardation; Orientation; Attention; Short/Long term memory; Visuospatial ability
Description	A diagnosis (initial assessment) and severity (repeated measurements) scale that can be used in research or clinical evaluations of symptom severity. All sources available of information are used for assessment, including information from family, visitors, hospital staff, physicians, and medical records.	
Versions	2 (DRS-R-98 is a revised version of the 1988 DRS)	
Scoring information	Severity items are rated on a scale of 0-3 and diagnostic items are rated on a scale of 0-2 or 0-3. The maximum possible score for severity items is 39, while the maximum total score is 46. Higher scores indicate more severe delirium; score of 0 indicates no delirium.	
Cognitive testing	Can be conducted when gathering information about patient, but not required	
Estimated time to rate	20-30 minutes for scoring; 1-2 hours for gathering information needed to rate the items (including family, staff interview, medical record review); rating of the patient is generally based on a 24- hour time period	
Require trained rater	Yes – can be completed by psychiatrist, other physician, nurse, and psychologist with adequate training in evaluating phenomenology. Rater must have clinical training.	
Administer to	Patient, in-person	
Special resources required	All available sources of information about patient, including information from family, visitors, hospital staff, physicians, and medical records	
How to obtain	Detailed instructions at https://doi.org/10.1176/jnp.13.2.229	
Languages available	English, Chinese	
Licensing Fee*	None	
Highest COSMIN** rating	Overall: 4.5/6 [†]	
Test performance characteristics	Trzepacz 2001 •Reliability (Inter-rater, Intraclass Correlation Coefficient = 0.98-0.99) COSMIN: FAIR •Responsiveness (n=6 delirious subjects reassessed after treatment when they no longer met DSM-IV criteria for delirium) DRS-98 severity pre-treatment 21.5 ±5.6, post-treatment 5.2 ±3.5; paired t-tests $p \leq 0.001$; COSMIN: FAIR	

* Fees and licensing information is effective as of 2018, but is subject to change over time

** COSMIN is used to rate a study's evaluation of a survey or test's measurement properties. COSMIN does NOT rate the instrument itself, but helps readers understand if they can have confidence in the results of studies evaluating measurement properties of surveys and tests. For example, a rigorous study evaluating a test with poor measurement properties will receive a “good” COSMIN rating, while a poorly-conducted study evaluating a test with good measurement properties will receive a “poor” COSMIN rating. Small sample size can impact all COSMIN ratings. You must consider both the COSMIN rating and the results of studies provided when forming your opinion about that test. *COSMIN ratings shown are based solely on the instrument’s original validation study.*

† COSMIN breakdown: internal consistency: FAIR, inter-rater reliability: FAIR, construct validity: GOOD, criterion validity: FAIR, content validity: GOOD, effect indicators: GOOD

References:

Trzepacz, P. T., Mittal, D., Torres, R., Canary, K., Norton, J., & Jimerson, N. (2001). Validation of the Delirium Rating Scale-Revised-98: comparison with the Delirium Rating Scale and the Cognitive Test for Delirium. *The Journal of neuropsychiatry and clinical neurosciences*, 13(2), 229-242. [*Reference for COSMIN review and card details*]

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Trzepacz, P.T., Baker, R.W. and Greenhouse, J. (1988). A symptom rating scale for delirium. *Psychiatry research*, 23(1), 89-97. [The DRS-R-98 is a revised version of the DRS, originally published in 1988].

Additional Test Performance Characteristics

- Rating scale scores in five diagnostic groups (DRS-98 total score=26.9±6.7 in delirium group, 13.9±4.2 in dementia, 7.7±4.3 in schizophrenia, 7.0±3.5 in depression, 8.9±3.6 in other; p<0.001)
- Sensitivity (ROC analysis; delirium group vs. all other groups [92% with cutoff at 15.25; 92% at 17.75])
- Specificity (ROC analysis; delirium group vs. all other groups [86% with cutoff at 15.25; 95% at 17.75])

Reviews:

Adamis, D., Sharma, N., Whelan, P.J.P., Macdonald, A.J.D. (2010). Delirium scales: A review of current evidence. *Aging & Mental Health*, 14(5):543-55. doi:10.1080/13607860903421011

Carvalho, J.P.L.M., de Almeida, A.R.P., Gusmao-Flores, D. (2013). Delirium rating scales in critically ill patients: a systematic literature review. *Rev Bras Ter Intensiva*, 25(2):148-54. doi:10.5935/0103-507x.20130026

De, J., Wand, A.P.F. (2015). Delirium Screening: A Systematic Review of Delirium Screening Tools in Hospitalized Patients. *The Gerontologist*, 55(6):1079-1099. doi:10.1093/geront/gnv100

Leonard, M. M., Nekolaichuk, C., Meagher, D. J., Barnes, C., Gaudreau, J. D., Watanabe, S., ... & Lawlor, P. G. (2014). Practical assessment of delirium in palliative care. *Journal of pain and symptom management*, 48(2), 176-190.

Smith, T., Hameed, Y., Cross, J., Sahota, O., Fox, C. (2013). Assessment of people with cognitive impairment and hip fracture: a systematic review and meta-analysis. *Arch Gerontol Geriatr*, 57(2):117-26. doi:10.1016/j.archger.2013.04.009

Van Velthuisen, E.L., Zwakhalen, S.M., Warnier, R.M., Mulder, W.J., Verhey, F.R., Kempen, G.I. (2016). Psychometric properties and feasibility of instruments for the detection of delirium in older hospitalized patients: a systematic review. *Int J Geriatr Psychiatry*, 31(9):974-89. doi:10.1002/gps.4441

Wong, C. L., Holroyd-Leduc, J., Simel, D. L., & Straus, S. E. (2010). Does this patient have delirium?: value of bedside instruments. *Jama*, 304(7), 779-786.

