

GRAPHICS SECTION

Cognitive Testing: Clock Drawing

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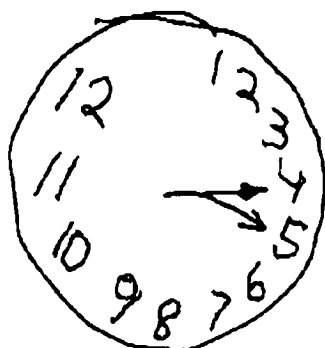
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An APS on an 85-year-old female retired teacher revealed that she had mild depression and complaints from her son of memory loss for the past year. She does her own housekeeping but relies on her son for bill paying. Her current Mini-Mental State Examination (MMSE) score was 25 out of 30. One year before that, it was 27 out of 30. On her current examination, she remembered 2 of 3 objects after 5 minutes. Both test results

were considered normal. Her doctor asked her to draw the face of a clock with the hands indicating 2:45. What she drew is displayed in the Figure.

The Clock Drawing Test is easier and faster to administer than many cognitive screens, such as the MMSE. It tests several areas of cognition, including memory and visuospatial ability. Hand placement, especially the minute hand, is the most abstract feature; time-setting errors are found in over 50% of



An 85-year-old woman drew this when her doctor asked her to draw the face of a clock with the hands indicating 2:45.

Rouleau Clock Scoring for Presence and Placement of Hands

Hands are in correct position and the size difference is respected	4
Slight errors in the placement of the hands or no representation of size difference between the hands	3
Major errors in the placement of the hands	2
Only 1 hand or poor representation of hands	1
No hands or perseveration of hands	0

people with dementia. A score of ≤ 2 out of 4 on a subsection of the test for hand placement has been shown to be predictive of early dementia (positive predictive power in this age group estimated at 61%, negative predictive power at 99%). The Table indicates the scoring used for the presence and placement of the clock's hands.

Few tests are easily administered or useful in screening for early dementia. The MMSE, the most commonly used cognitive screening

test, is not sensitive for mild disease. This applicant has a hand placement score of 2, suggesting the presence of early dementia despite her normal MMSE scores.

REFERENCES

1. Esteban-Santillan C, Praditsuwan R, Ueda H et al. Clock drawing test in very mild Alzheimer's disease. *J Am Geriatr Soc.* 1998;46:1266–1269.
2. Kozora E, Cullum CM. Qualitative features of clock drawing in normal aging and Alzheimer's disease. *Psychol Assess.* 1994;1:179–187.