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## **Mental Status Assessment of Older Adults: The Mini-Cog**

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**WHY:** There is increased incidence of cognitive impairment with age. Increasing age is the greatest risk factor for Alzheimer's disease. One in 10 individuals over 65 and nearly half of those over 85 are affected (Evans, et al, 1989). The advent of treatment for dementing illness necessitates the early identification of cognitive impairment using a reliable and valid tool which can be quickly implemented in the primary care setting. Early diagnosis allows the person to plan for the future; medications may slow disease progression, delay functional dependency and nursing home placement. Cholinesterase inhibitors show less effectiveness initiated later in disease course.

**BEST TOOL:** The Mini-Cog exam is composed of three item recall and the Clock Drawing Test (CDT). This tool can be used to detect dementia quickly and easily in various settings, either during routine visits or hospitalization. Clinicians may use the tool to assess a person's registration, recall and executive function. The scoring algorithm is as follows: Unsuccessful recall of all three items after the CDT distractor is classified as demented. Successful recall of all three items is classified as non-demented. Those individuals able to recall one or two of the items are classified based on the CDT. An abnormal CDT equates with demented and a normal CDT is considered normal and equates with non-demented (Borson, S., et al, 2000).

**TARGET POPULATION:** The Mini-Cog is appropriate for use in all health care settings. It is appropriate to be used with older adults at various heterogeneous language, culture and literacy levels.

**VALIDITY AND RELIABILITY:** The Mini-Cog was developed as a brief screening tool to differentiate patients with dementia from those without dementia. The Mini-Cog has sensitivity ranging from 76-99%, and specificity ranging from 89-93% with 95% confidence interval. A chi square test reported 234.4 for Alzheimer's dementia and 118.3 for other dementias ( $p < 0.001$ ). This tool has strong predictive value in multiple clinical settings (Borson, et al, 2000; Borson, et al, 2003).

### **STRENGTHS AND LIMITATIONS:**

The Mini-Cog takes about 3 minutes to administer. The Clock Drawing component of the test is scored as normal or abnormal, for the purpose of the Mini-Cog. Some researchers suggest the clock drawing tool should be scored to quantify impairment. This would increase complexity and training requirements. The Mini-Cog is not influenced by education, culture or language. Simple, short training is required to perform the Mini-Cog accurately. Assessment using the Mini-Cog was perceived as less stressful to the patient than other longer mental status tests. Its accuracy in heterogeneous groups may increase the identification of dementias in populations less diagnosed, increasing minority participation in research and improving parity of early treatment.

### **MORE ON THE TOPIC:**

Best practice information on care of older adults: [www.ConsultGeriRN.org](http://www.ConsultGeriRN.org).

Borson, S., Scanlan, J.M., Brush, M., Vitallano, P., & Dokmak, A. (2000). The Mini-Cog: A cognitive 'vital signs' measure for dementia screening in multi-lingual elderly. *International Journal of Geriatric Psychiatry*, 15(11), 1021-1027.

Borson, S., Scanlan, J.M., Chen, P., & Ganguli, M. (2003). The Mini-Cog as a screen for dementia: Validation in a population-based sample. *JAGS*, 51(10), 1451-1454.

Borson, S., Scanlan, J.M., Watanabe, J., Tu, S.P., & Lessig, M. (2005). Simplifying detection of cognitive impairment: Comparison of the Mini-Cog and Mini-Mental State Examination in a multiethnic sample. *JAGS*, 53(5), 871-874.

Borson, S., Scanlan, J.M., Watanabe, J., Tu, S.P., & Lessig, M. (2006). Improving identification of cognitive impairment in primary care. *International Journal of Geriatric Psychiatry*, 21(4), 349-355.

Evans, D., Funkenstein, H., Albert, M., & Scherr, N. (1989). Prevalence of Alzheimer's disease in a community population of older persons: Higher than previously reported. *JAMA*, 262(18), 2552 - 2556.

Royall, D.R., Cordes, J.A., & Polk, M. (1998). CLOX: An executive clock drawing task. *Journal of Neurology, Neurosurgery, and Psychiatry*, 64(5), 588-594.

Scanlan, J.M., & Borson, S. (2001). The Mini-Cog: Receiver operating characteristics with expert and naïve raters. *International Journal of Geriatric Psychiatry*, 16(2), 216-222.

# The Mini Cog

## ADMINISTRATION

The test is administered as follows:

1. Instruct the patient to listen carefully to and remember 3 unrelated words and then to repeat the words.
2. Instruct the patient to draw the face of a clock, either on a blank sheet of paper or on a sheet with the clock circle already drawn on the page. After the patient puts the numbers on the clock face, ask him or her to draw the hands of the clock to read a specific time.
3. Ask the patient to repeat the 3 previously stated words.

## SCORING

Give 1 point for each recalled word after the CDT distractor.

Patients recalling none of the three words are classified as demented (Score = 0).

Patients recalling all three words are classified as non-demented (Score = 3)

Patients with intermediate word recall of 1-2 words are classified based on the CDT (Abnormal = demented; Normal = non-demented)

Note: The CDT is considered normal if all numbers are present in the correct sequence and position, and the hands readably display the requested time.

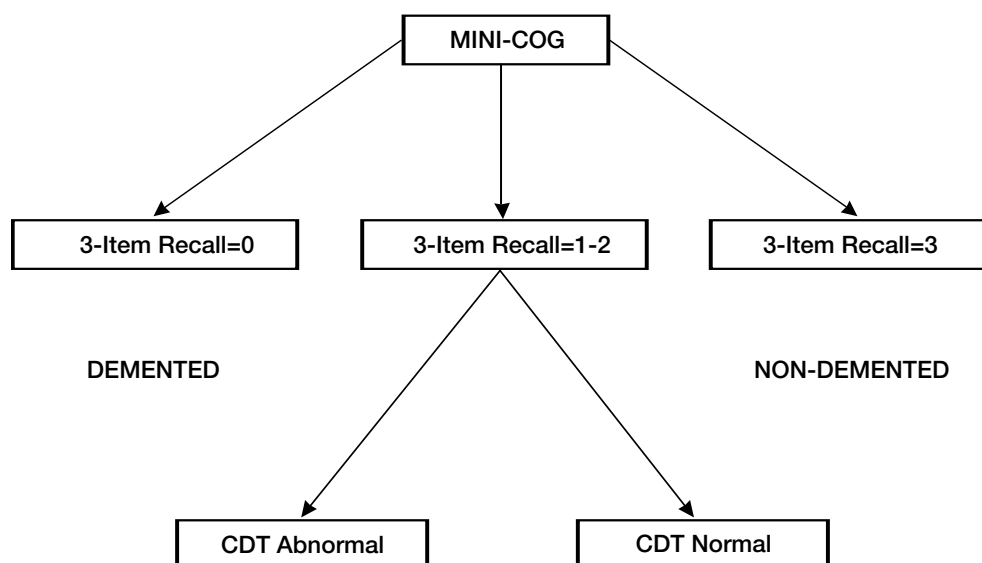


Fig. 1. Mini-Cog scoring algorithm (Borson, et al, p 1024).

From Borson, S., Scanlan, J., Brush, M., Vitallano, P., & Dokmak, A. (2000). The Mini-Cog: A cognitive 'vital signs' measure for dementia screening in multi-lingual elderly. *International Journal of Geriatric Psychiatry*, 15(11), 1021-1027. Copyright John Wiley & Sons Limited. Reproduced with permission.