



Check Up from the Neck Up:
Assessing Cognition
in Older Adults
Michelle Barclay, MA



ACKNOWLEDGEMENTS

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Minnesota Area Geriatric Education Center (MAGEC)

Grant #UB4HP19196

Director: Robert L. Kane, MD

Associate Director: Patricia A. Schommer, MA



Objectives



After attending this webinar, you will be able to:

- Describe the value of timely detection of cognitive impairment and dementia
- Administer, score, and interpret at least one objective cognitive assessment tool
- Discuss cognitive assessment results and next steps with patients and providers



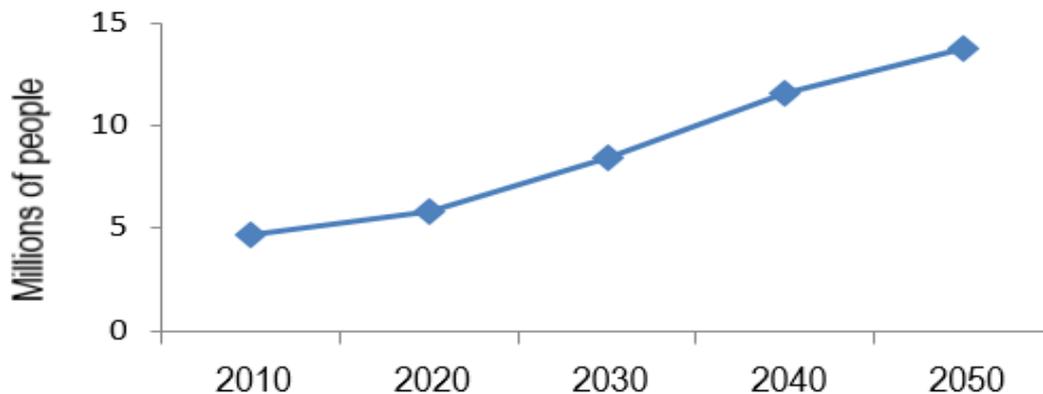


Challenges and Opportunities

Aging Population with Increased Dementia



Projected number of people 65+ years old in the U.S. with Alzheimer's disease (2010-2050)



Patients with Dementia



- A population with complex care needs



**2.5 chronic
conditions
(average)**



**5+
medications
(average)**



**3 times more
likely to be
hospitalized**

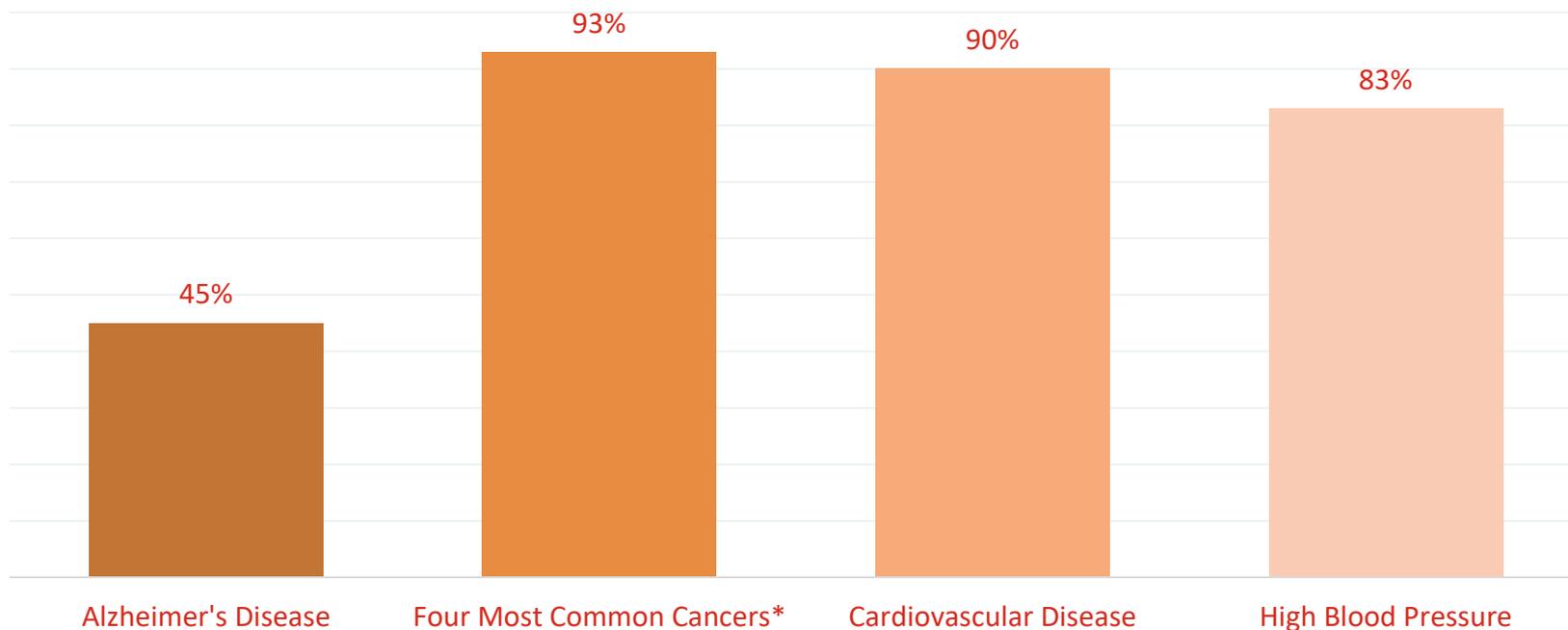
**Many
admissions
from
preventable
conditions,
with higher
per person
costs**

- Indisputable correlation between chronic conditions and costs

Diagnostic Awareness



Percent of Seniors Diagnosed with Condition Who Have Had Their Diagnosis Shared With Them



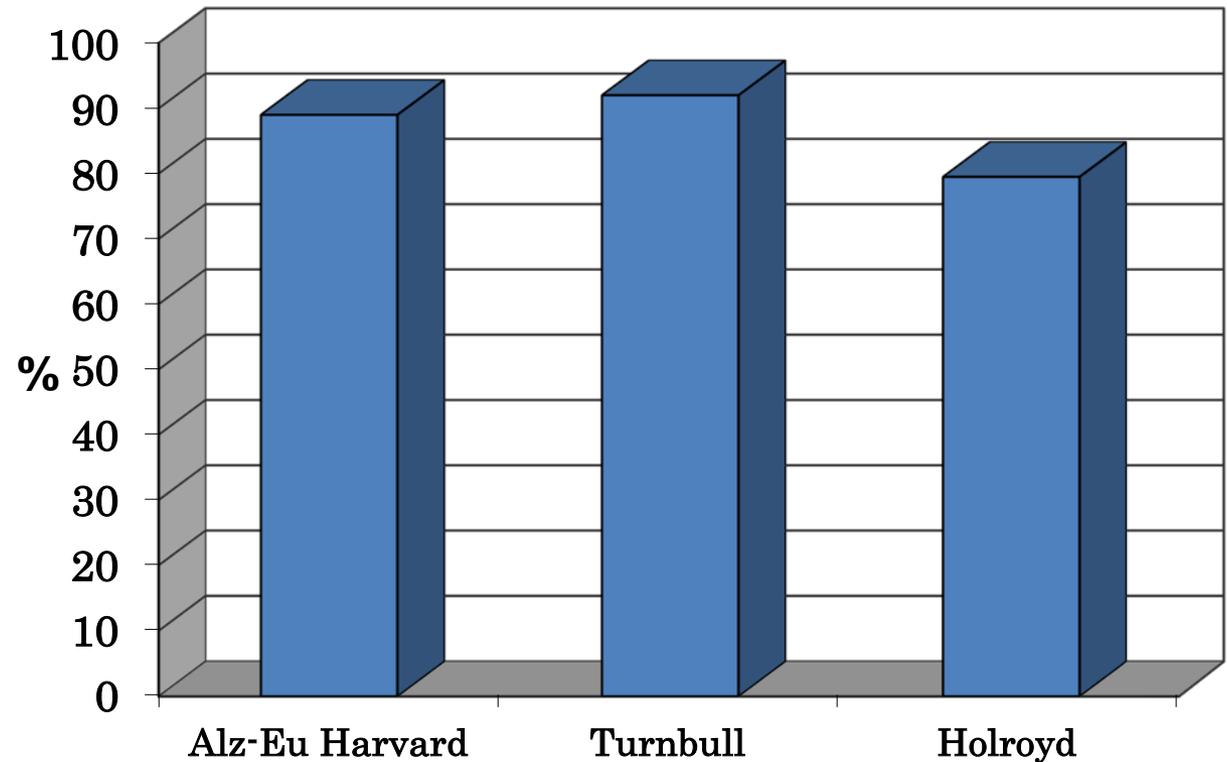
*Breast, Lung, Prostate, and Colorectal

Myth: People don't want to know they have Alzheimer's disease



Studies Agree:

Most people want to know.



Rational for Timely Detection



1. Improved management of **co-morbid conditions**
2. Reduce ineffective, expensive, **crisis-driven** use of healthcare resource
3. Improve **quality of life**
 - Patients can participate in decisions
 - Decrease burden on family and caregivers
4. Intervene to promote a safe and happy environment that **supports independence**

Increasing Cost of Inaction



	Recognition +	Recognition -
Hospital Duration (Day)	6.7	7.5
30 day Post Hospital Mortality	4.8%	6.6%
Discharged Home	31.5%	45.2%
Driving	11.6%	22.1% *
Managing Medications	14.9%	40.4% *
Managing Finances	7.3%	20.1% *
Preparing Hot meals	10.8%	34.1% *

* Adjusted P value < 0.05

Knowledge Check



What is the greatest risk factor for Alzheimer's disease?

- a. History of vascular disease
- b. Family history
- c. Age
- d. Diabetes

Knowledge Check



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- a. History of vascular disease
- b. Family history
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Detecting Cognitive Impairment

Clinical Provider Practice Tool



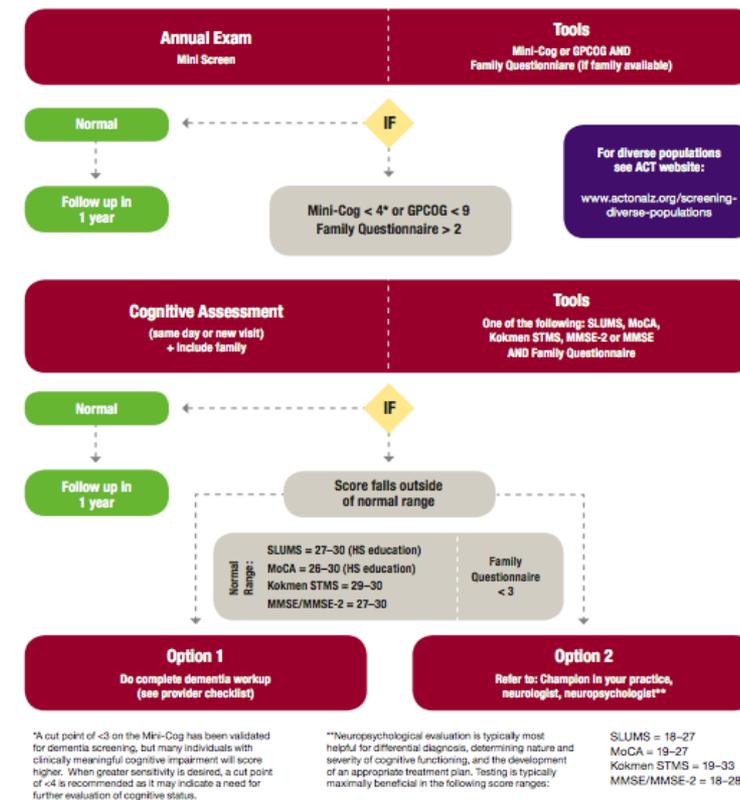
- Easy button workflow for:

1. Identification
2. Dementia work-up
3. Treatment / care

www.actonalz.org/provider-practice-tools

CLINICAL PROVIDER PRACTICE TOOL

COGNITIVE IMPAIRMENT IDENTIFICATION



Objective Measures



- Wide range of options
 - Mini-Cog™ (MC)
 - Mini-Mental State Exam© (MMSE)
 - St. Louis University Mental Status Exam™ (SLUMS)
 - Montreal Cognitive Assessment™ (MoCA)
 - Rowland Universal Dementia Assessment (RUDAS)
- All but MMSE free, in public domain, and online

Administration Best Practices



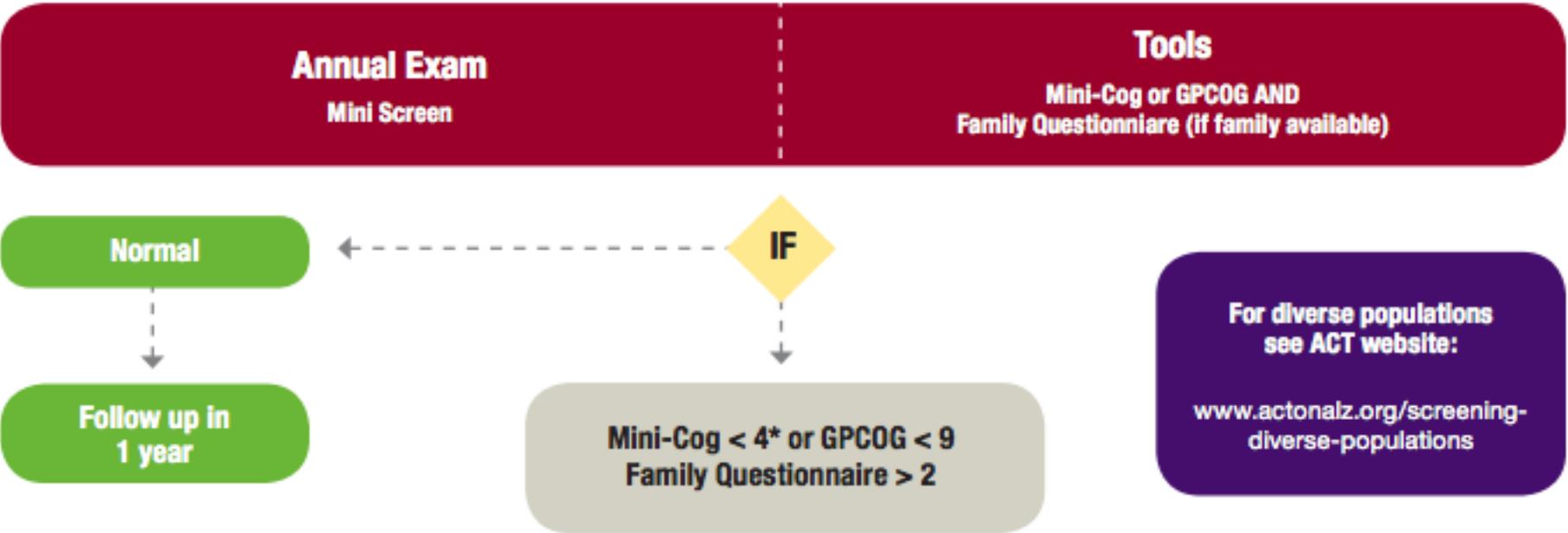
- **Do not:**
 - Use the words “test” or “memory”
 - Instead: “We’re going to do something next that requires some *concentration*”
 - Allow patient to give up prematurely or skip questions
 - Deviate from standardized instructions
 - Offer multiple choice answers
 - Be soft on scoring
 - Score ranges already padded for normal errors
 - Deduct points where necessary – **be strict**

Administration Best Practices



- Never use the words “dementia” or “Alzheimer’s disease”
 - Screening tools are **not diagnostic**
 - Using these terms is premature at this stage and can contribute to anxiety/fear
- Avoid
 - Being unnecessarily wordy
 - Over-explaining or rationalizing the process
- **DO:**
 - Focus on health and well-being
 - Smile, be relaxed, practiced, comfortable

Cognitive Impairment Identification Flow Chart



Mini-Cog™



Contents

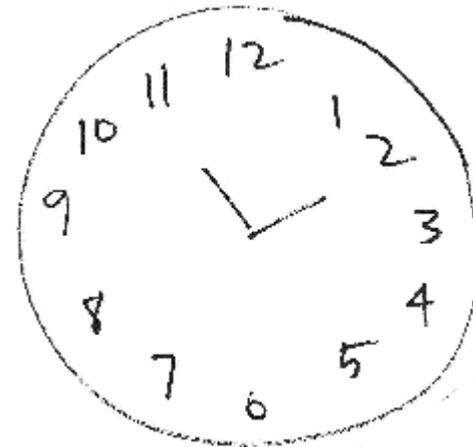
- Verbal Recall (3 points)
- Clock Draw (2 points)

Subject asked to recall 3 words
Leader, Season, Table +3

Advantages

- Quick (2-3 min)
- Easy
- High yield (executive fx, memory, visuospatial)

Subject asked to draw clock,
set hands to **10 past 11**



+2

ID: _____ Date: _____

Step 1: Three Word Registration

Look directly at person and say, "Please listen carefully. I am going to say three words that I want you to repeat back to me now and try to remember. The words are [select a list of words from the versions below]. Please say them for me now." If the person is unable to repeat the words after three attempts, move on to Step 2 (clock drawing).

The following and other word lists have been used in one or more clinical studies.¹⁻³ For repeated administrations, use of an alternative word list is recommended.

Version 1	Version 2	Version 3	Version 4	Version 5	Version 6
Banana	Leader	Village	River	Captain	Daughter
Sunrise	Season	Kitchen	Nation	Garden	Heaven
Chair	Table	Baby	Finger	Picture	Mountain

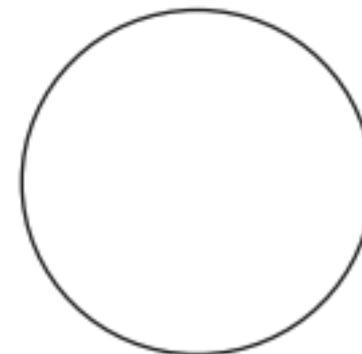
Clock Drawing

ID: _____ Date: _____

Step 2: Clock Drawing

Say: "Next, I want you to draw a clock for me. First, put in all of the numbers where they go." When that is completed, say: "Now, set the hands to 10 past 11."

Use preprinted circle (see next page) for this exercise. Repeat instructions as needed as this is not a memory test. Move to Step 3 if the clock is not complete within three minutes.



Step 3: Three Word Recall

Ask the person to recall the three words you stated in Step 1. Say: "What were the three words I asked you to remember?" Record the word list version number and the person's answers below.

Word List Version: _____ Person's Answers: _____

Scoring

Word Recall: _____ (0-3 points)	1 point for each word spontaneously recalled without cueing.
Clock Draw: _____ (0 or 2 points)	Normal clock = 2 points. A normal clock has all numbers placed in the correct sequence and approximately correct position (e.g., 12, 3, 6 and 9 are in anchor positions) with no missing or duplicate numbers. Hands are pointing to the 11 and 2 (11:10). Hand length is not scored. Inability or refusal to draw a clock (abnormal) = 0 points.
Total Score: _____ (0-5 points)	Total score = Word Recall score + Clock Draw score. A cut point of <3 on the Mini-Cog™ has been validated for dementia screening, but many individuals with clinically meaningful cognitive impairment will score higher. When greater sensitivity is desired, a cut point of <4 is recommended as it may indicate a need for further evaluation of cognitive status.

Mini-Cog



Pass

- ≥ 4

Fail

- 3 or less

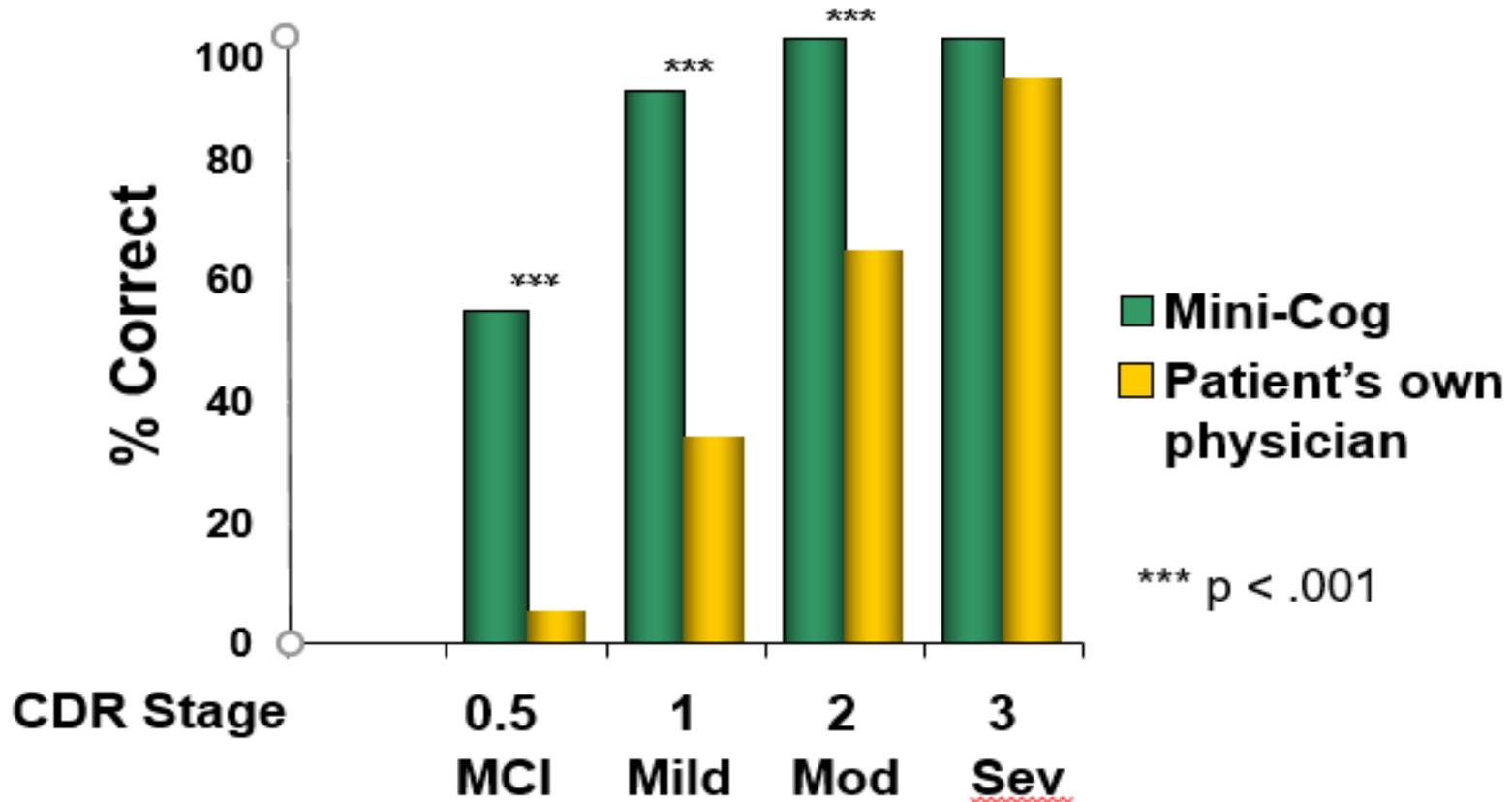
NOTE: A cut point of <3 on the Mini-Cog has been validated for dementia screening, but many individuals with clinically meaningful cognitive impairment will score higher. When greater sensitivity is desired, a cut point of <4 is recommended as it may indicate a need for further evaluation of cognitive status.

Mini-Cog Research



- Performance unaffected by education or language
 - Borson Int J Geriatr Psychiatry 2000
- Sensitivity and specificity similar to MMSE
 - Borson JAGS 2003
- Does **not disrupt workflow** & increases rate of diagnosis in primary care
 - Borson JGIM 2007
- Failure associated with **inability to fill pillbox**
 - Anderson et al The Consultant Pharmacist 2008

Mini-Cog Improves Physician Recognition

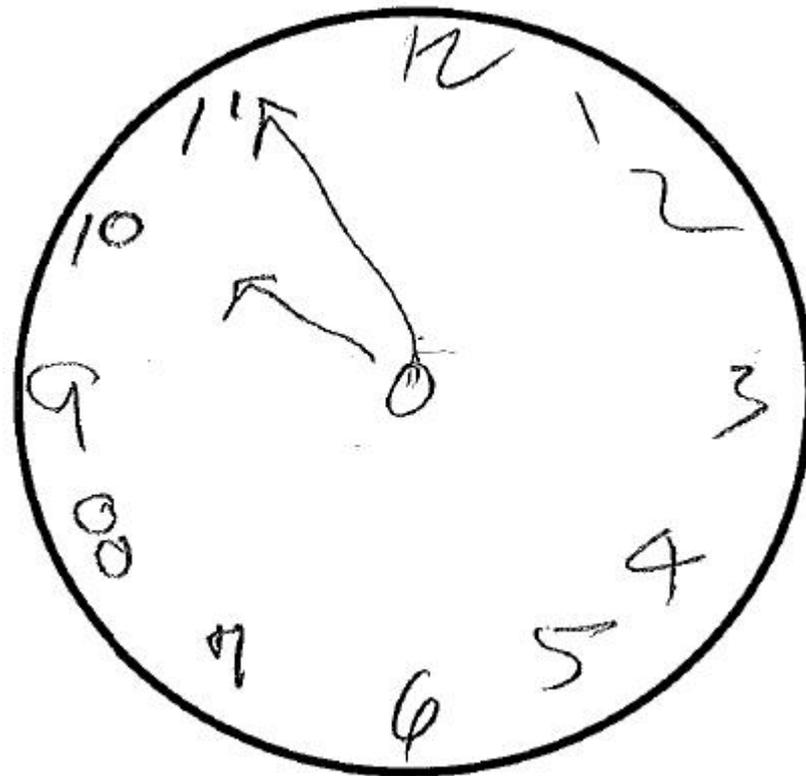


Mini-Cog: Sam



<http://youtu.be/CRQEighdb0w>

Mini-Cog Scoring: Sam



Mini-Cog Scoring: Sam



Introductory Script:

- We are going to take a quick look at your memory. Some people think this task is easy and others find it more challenging. Just do the best you can.
- I am going to give you 3 words to try and remember. Listen carefully and repeat these words back to me when I'm finished: **Leader, Season, Table** ✓
(Repeat words if necessary to make sure patient has registered each one. Do not warn them that you will ask for the words again later).
- *(Fold paper in half so circle is facing patient).* Now, I want you to make a clock for me by putting in all the numbers where they are supposed to go. Then, set the time for 10 past 11. *(Repeat instructions as needed – this is not a memory test. If patient cannot complete the clock in 3 minutes, move on to next step).*

Season

- Now, what were those 3 words I asked you to remember earlier?

Mini-Cog Scoring:

Word recall 1 / 3

Clock draw ⊙ / 2

Total 1 / 5

Screen FAIL: 0 – 3

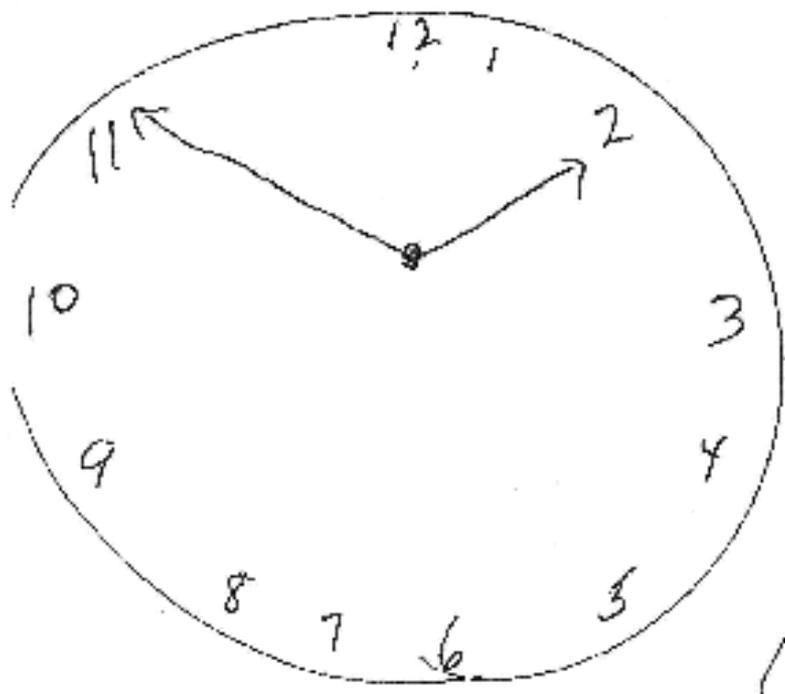
Screen PASS: 4 – 5

Word recall: 1 point for each word spontaneously recalled without cueing.

Clock draw: 0 or 2 points. To obtain credit, all numbers must be in correct sequence and position (e.g., 12, 3, 6, and 9 in anchor positions) with no missing or duplicate numbers. Two hands point toward 11 and 2 (length of hands does not matter).

Sam

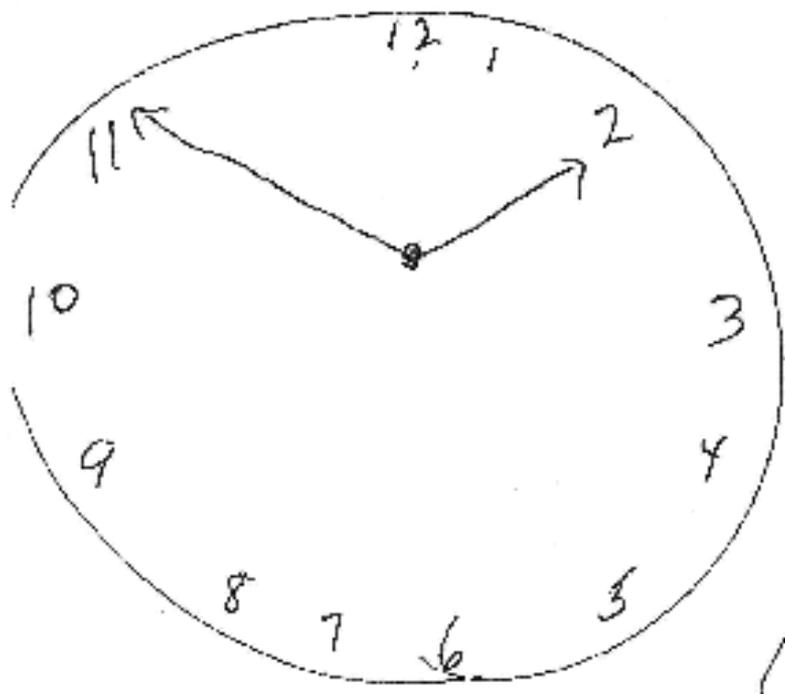
Knowledge Check



How many points is this clock worth?

- a. 0 points
- b. 1 point
- c. 2 points

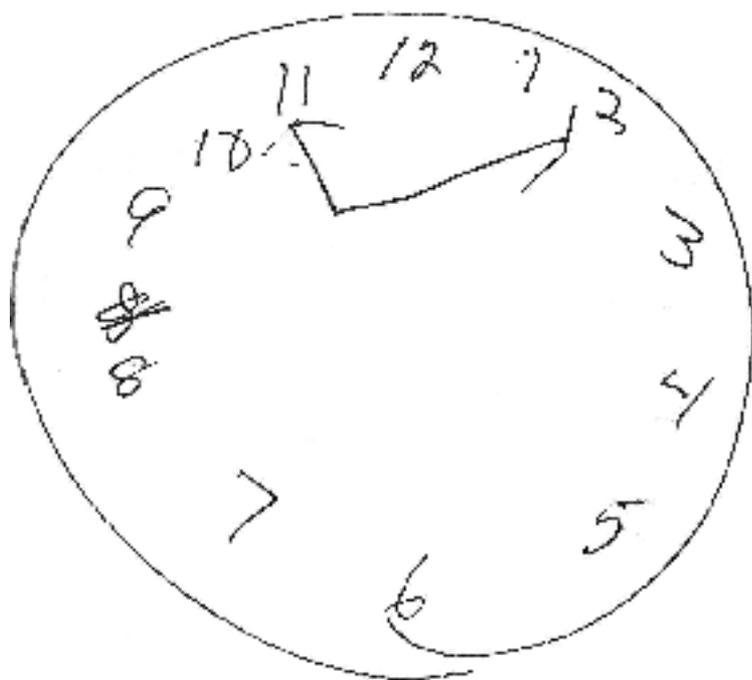
Knowledge Check



How many points is this clock worth?

- a. 0 points
- b. 1 point
- c. 2 points

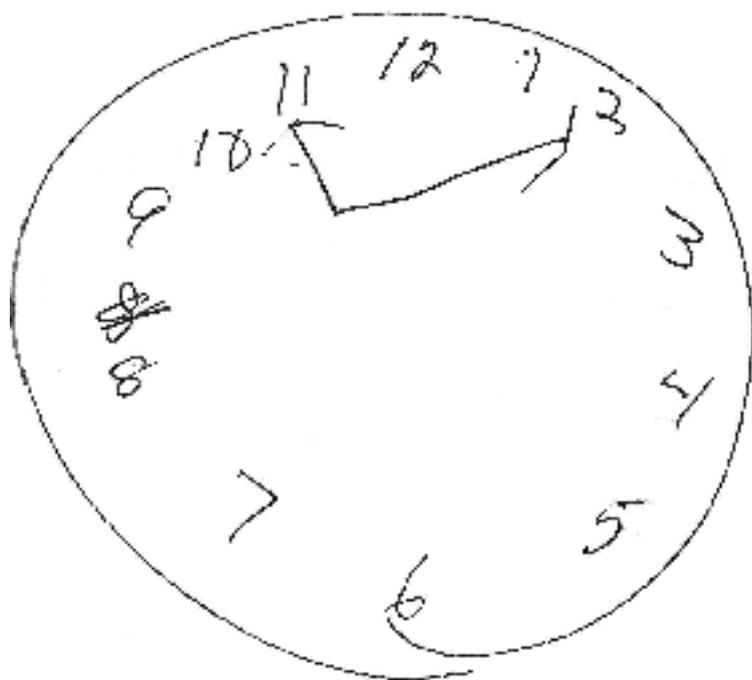
Knowledge Check



How many points is this clock worth?

- a. 0 points
- b. 1 point
- c. 2 points

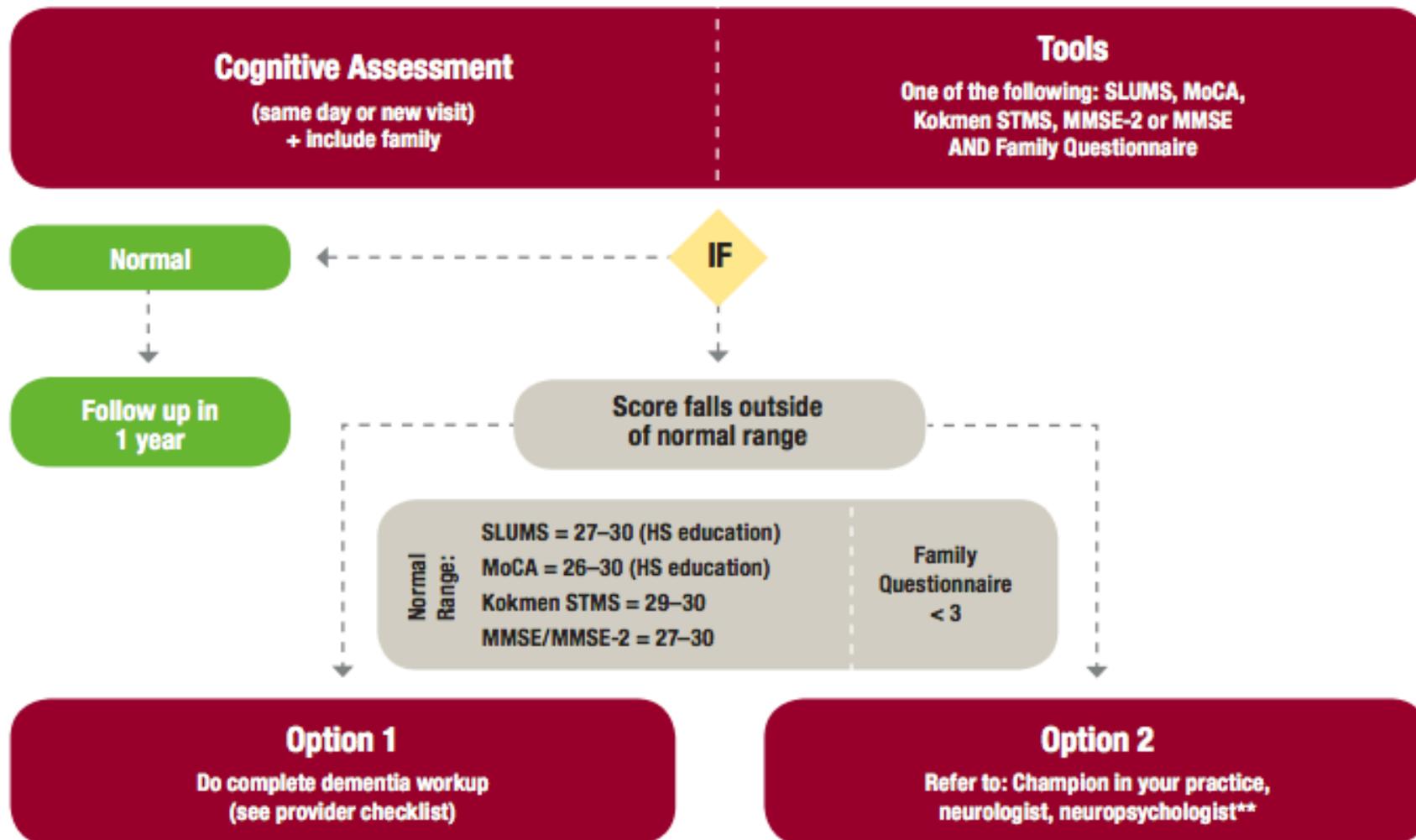
Knowledge Check



How many points is this clock worth?

- a. 0 points
- b. 1 point
- c. 2 points

Cognitive Impairment Identification Flow Chart



SLUMS



VAMC SLUMS Examination

Questions about this assessment tool? E-mail aging@slu.edu.

Name _____ Age _____

Is patient alert? _____ Level of education _____

____/1
____/1
____/1
____/3
____/3
____/5
____/2
____/4

① 1. What day of the week is it?

① 2. What is the year?

① 3. What state are we in?

4. Please remember these five objects. I will ask you what they are later.

Apple Pen Tie House Car

5. You have \$100 and you go to the store and buy a dozen apples for \$3 and a tricycle for \$20.

① How much did you spend?

② How much do you have left?

6. Please name as many animals as you can in one minute.

① 0-4 animals ② 5-9 animals ③ 10-14 animals ④ 15+ animals

7. What were the five objects I asked you to remember? 1 point for each one correct.

8. I am going to give you a series of numbers and I would like you to give them to me backwards.

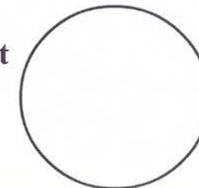
For example, if I say 42, you would say 24.

① 87 ② 649 ③ 8537

9. This is a clock face. Please put in the hour markers and the time at ten minutes to eleven o'clock.

② Hour markers okay

② Time correct



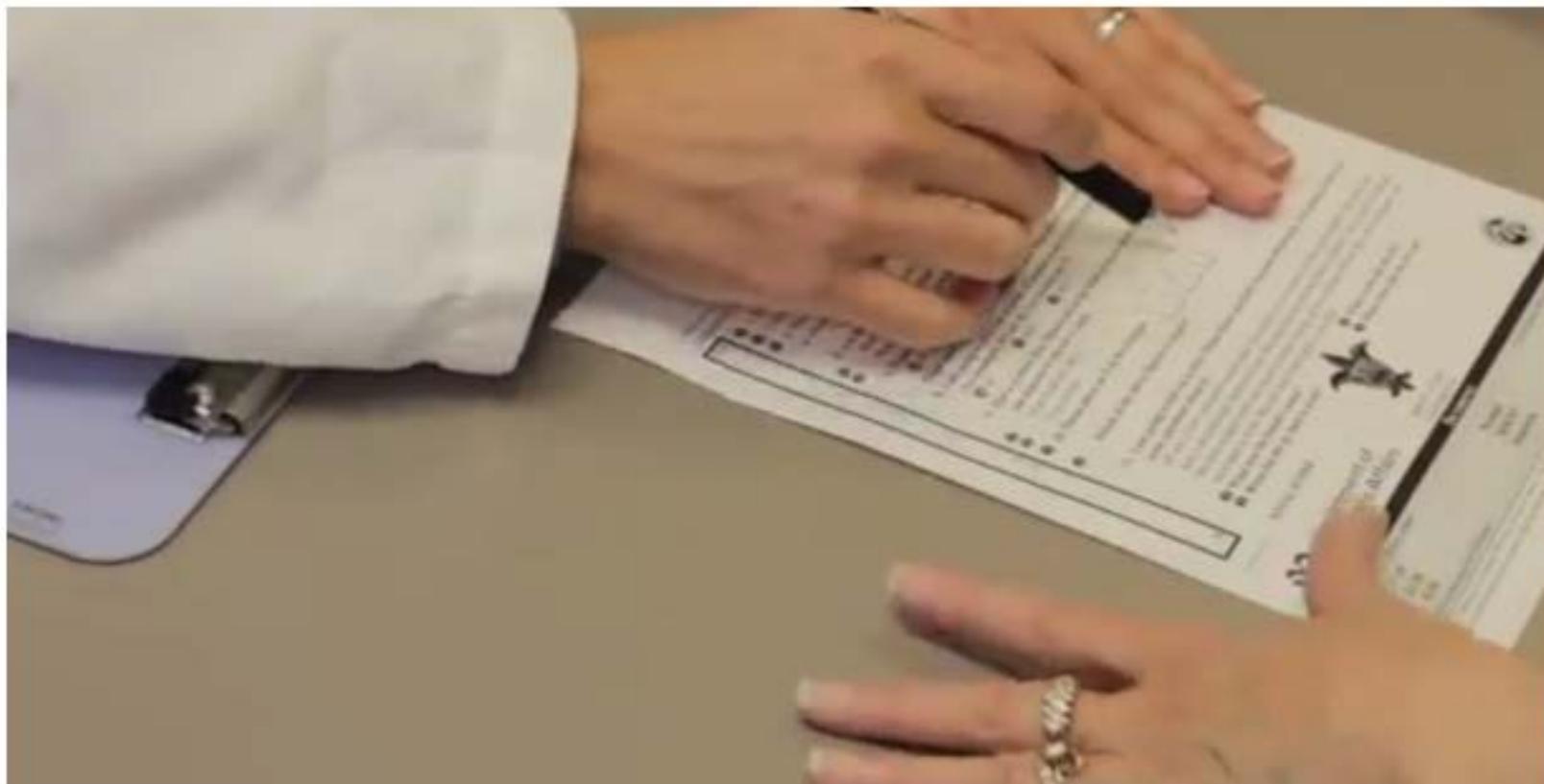
SLUMS



	High School Diploma	Less than 12 yrs education
Pass	≥ 27	≥ 25
Fail	26 or less	24 or less

Tariq SH, Tumosa N, Chibnall et al. Comparison of the Saint Louis University mental status examination and the mini-mental state examination for detecting dementia and mild neurocognitive disorder--a pilot study. Am J Geriatr Psychiatry. 2006 Nov;14(11):900-10.

SLUMS: Colleen



<http://youtu.be/jyp0ShPiUH8?list=UUOPv8U5bHcdDCm4edmQDY9g>

MoCA



MONTREAL COGNITIVE ASSESSMENT (MOCA)

NAME :

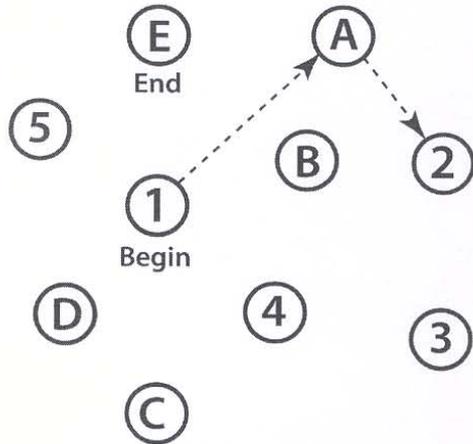
Education :

Sex :

Date of birth :

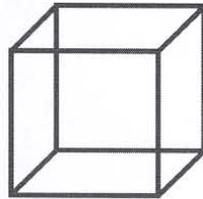
DATE :

VISUOSPATIAL / EXECUTIVE



[]

[]



Copy
cube

Draw CLOCK (Ten past eleven)
(3 points)

POINTS

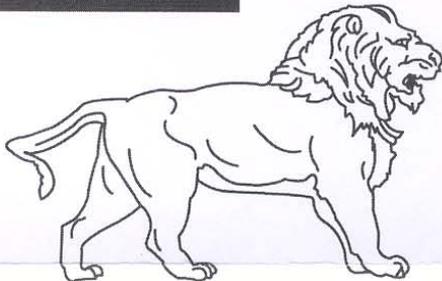
[]
Contour

[]
Numbers

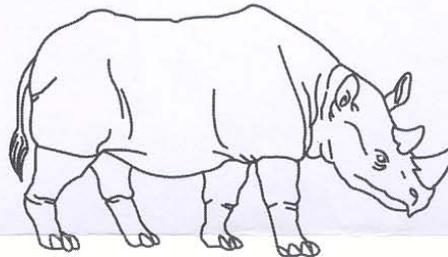
[]
Hands

___/5

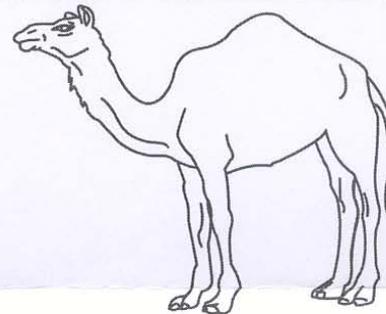
NAMING



[]



[]



[]

___/3

MoCA



Pass

- ≥ 26

Fail

- 25 or less

MoCA: Sam



<http://youtu.be/ryf8SG0NQLQ?list=UUOPv8U5bHcdDCm4edmQDY9g>

Alternative Tools



- Virtually all tools based upon a euro-centric cultural and educational model
- Consider: country and language of origin, type/quality/length of education, disabilities (visual, auditory, motor)
- Alternative tools may be less biased
- More information
 - **Screening Diverse Populations** on the ACT website

Family Questionnaire



FAMILY QUESTIONNAIRE

We are trying to improve the care of older adults. Some older adults develop problems with memory or the ability to think clearly. When this occurs, it may not come to the attention of the physician. Family members or friends of an older person may be aware of problems that should prompt further evaluation by the physician. Please answer the following questions. This information will help us to provide better care for your family member.

In your opinion does _____ have problems with any of the following?
Please circle the answer.

- | | | | | |
|---|-------------------|------------------|-------------------|-----------------------|
| 1. Repeating or asking the same thing over and over? | <i>Not at all</i> | <i>Sometimes</i> | <i>Frequently</i> | <i>Does not apply</i> |
| 2. Remembering appointments, family occasions, holidays? | <i>Not at all</i> | <i>Sometimes</i> | <i>Frequently</i> | <i>Does not apply</i> |
| 3. Writing checks, paying bills, balancing the checkbook? | <i>Not at all</i> | <i>Sometimes</i> | <i>Frequently</i> | <i>Does not apply</i> |
| 4. Deciding what groceries or clothes to buy? | <i>Not at all</i> | <i>Sometimes</i> | <i>Frequently</i> | <i>Does not apply</i> |
| 5. Taking medications according to instructions? | <i>Not at all</i> | <i>Sometimes</i> | <i>Frequently</i> | <i>Does not apply</i> |

Relationship to patient _____
(spouse, son, daughter, brother, sister, grandchild, friend, etc.)

www.actonalz.org/pdf/Family-Questionnaire.pdf

Knowledge Check



Research has demonstrated that failing the Mini-Cog is associated with the inability to:

- a. Fill a pill box
- b. Drive a car
- c. Balance a checkbook
- d. Follow a recipe

Knowledge Check



Research has demonstrated that failing the Mini-Cog is associated with the inability to:

- a. **Fill a pill box**
- b. Drive a car
- c. Balance a checkbook
- d. Follow a recipe



Communicating Cognitive Assessment Results

Scripting: Framing the Purpose



- Regardless of a passing or failing score, explain the patient’s test result by first reminding them of the assessment purpose

“The purpose of this task was to check on the health of the brain and determine if there is any need for further evaluation of your thinking or memory.”

Scripting: Passing Score



- “You obtained a normal score on this measure, which is good news. No additional action is needed.”
- “However, if you have concerns about your thinking or memory, talk to your provider.”

Scripting: Failing Score



- Nurse/Allied health professional:
 - “Your doctor will review the results with you today during your visit.”

Scripting: Failing Score



- Physician/Provider:
 - “Your score on the measure was a little low today. Have you been having any trouble with your memory lately?”
 - “I would like you to schedule a follow-up appointment with me (or neurology, the memory clinic, psychiatry, etc.) on your way out so we can take a closer look at your memory. This is an important part of your care and an important part of staying healthy.”
 - Enter order for follow-up/referral

Scripting: Failing Score



- “Today we did a brief exam to check on the health of the brain. Your score on this measure was a little low. This is like getting blood work back that is outside the normal range. We should follow-up on this. I am going to send you to a specialist so we can determine what this means and what we should do about it.”

Clinical Provider Practice Tool



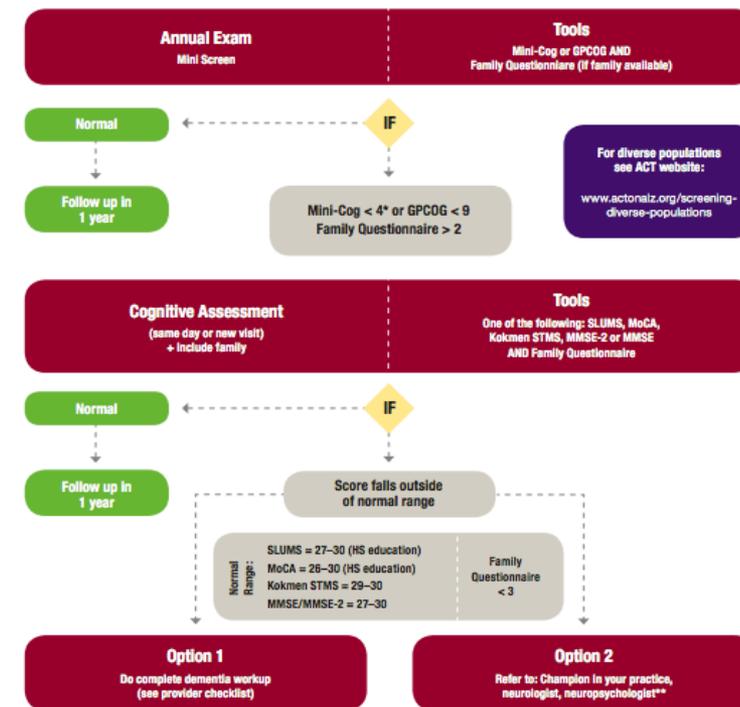
- Easy button workflow for:

1. Identification
2. Dementia work-up
3. Treatment / care

www.actonalz.org/provider-practice-tools

CLINICAL PROVIDER PRACTICE TOOL

COGNITIVE IMPAIRMENT IDENTIFICATION



*A cut point of <3 on the Mini-Cog has been validated for dementia screening, but many individuals with clinically meaningful cognitive impairment will score higher. When greater sensitivity is desired, a cut point of <4 is recommended as it may indicate a need for further evaluation of cognitive status.

**Neuropsychological evaluation is typically most helpful for differential diagnosis, determining nature and severity of cognitive functioning, and the development of an appropriate treatment plan. Testing is typically maximally beneficial in the following score ranges:

SLUMS = 18-27
MoCA = 19-27
Kokmen STMS = 19-33
MMSE/MMSE-2 = 18-28





Questions

ACKNOWLEDGEMENTS

This presentation was created by ACT on Alzheimer's, an award-winning, nationally recognized, volunteer-driven collaborative seeking to create supportive environments for everyone touched by Alzheimer's disease and to prepare Minnesota for its impacts.

ACT on Alzheimer's®

Executive Co-Leads: Olivia Mastry, JD, MPH, Michelle Barclay, MA & Emily Farah-Miller, MS

Lead Presentation Authors: Terry Barclay, PhD and Michelle Barclay, MA

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Visit www.actonalz.org/provider-practice-tools for more information and to access supportive tools and resources.

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Alzheimer's Association

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