

Diabetes Prevention Program Outcomes Study (DPPOS)

Cognitive Assessments Manual

Cognitive Coordinating Center Personnel:

José A. Luchsinger, MD, MPH
Jennifer Manly, PhD
Danurys Sanchez, MS.

Contact and Correspondence information

DPPOS Cognitive Coordinating Center
C/O José Luchsinger
PH9 Center, room 210
630 West 168th Street
New York, NY 10032
Tel: 212-3054730
Fax: 212-3059349 (address to José Luchsinger, DPPOS Cognitive Coordinating Center).
Email for questions and delivery of PDF and audio files (always copy both emails):
jal94@cumc.columbia.edu (José A. Luchsinger)
dls167@cumc.columbia.edu (Danurys Sanchez)

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Interviewing Guidelines

1. INTRODUCTION

Cognitive assessments were conducted in DPPOS in Years 8 and 10. The cognitive battery included:

- The 6 items of the mini-mental status exam,
- The Spanish English Verbal Learning Test (SEVLT)
- The letter fluency test
- The animal fluency test,
- The Digit Symbol Substitution Test (DSST).

In Year 16, there was a change in the battery for DPPOS cognitive assessment. The 6 items and the letter and animal fluency tests were eliminated. In their place the 3MS has been added. Thus the new cognitive battery is as follows:

- 3MS
- SEVLT
- DSST

The following are general guidelines for interviewing, procedures for handling specific difficulties, and special considerations for conducting a cognitive assessment.

2. OVERVIEW OF PROCEDURES

The ultimate goal of the research interview is the standardized and reliable collection of data. The interviewer plays an important role in serving as the human conduit of information from participants to the database. The way the interviewer conducts the interviews both facilitates and standardizes the gathering of the data. The following are some of the important roles of the interviewer.

A trained examiner administers the cognitive function tests in a fixed order, one right after the other, during a single session in a quiet room. The tests are administered following the instructions printed on the Cognitive Assessment forms and/or administration manual. Test results are tabulated by the interviewer after the participant has completed the tests and left the room.

The order of test administration is as follows:

1. 3MS
2. SEVLT
3. DSST

The testing environment and examiner's behavior should be geared toward optimizing the participant's performance on each of the cognitive measures.

Prior to the visit and at the time of testing, please ask the participant if he/she uses reading glasses or wears a hearing aid. If so, these items should be worn during testing. Second, you need to assess whether hearing and vision are adequate or inadequate for optimal performance. These decisions are made from self-report by the participant AND also from observations made by the interviewer in the field.

To rate vision as adequate or inadequate, ask the participant if they wear glasses, and if so, if they have them. If they do not have them, ask if they need glasses for reading. If they need glasses and do not

have them, but can clearly see and copy the symbols in the Digit Symbol, then vision is adequate. If they say they do not need glasses but cannot distinguish the symbols correctly, then mark vision as inadequate.

To rate hearing as adequate or inadequate, ask the participant if they wear a hearing aide. If not, ask if they have problems with their hearing. Their hearing is inadequate if you have to scream, or repeat questions, regardless of whether they have a hearing aide or not. Their hearing is adequate if they do not have a hearing problem both from self-report and observation during interview.

The testing room must have a table with sufficient workspace and appropriate lighting for the participant to comfortably complete the Digit Symbol Substitution Test.

A good quality stopwatch is necessary to time components of the cognitive function exam. The stopwatch should be simple to use, easy to read, and preferably one that allows the examiner to begin and end timing silently (some stopwatches produce a sound upon starting and stopping).

Timing should always be as discrete as possible to avoid producing anxiety and affecting test results. Although time limits are set for some tests, the participant should not be told of any time limit on any measure, unless they ask.

Please have this manual with you during every test administration. *Always read scripts exactly as written.* The scripts found at the end of your manual may be used in place of the manual **only after** you have become familiar with all test procedures and administered the battery a few times. It is best to use this manual as you administer each test so that you are able to prompt appropriately as needed. Each participant should be allowed to attempt every task, unless it is determined that the participant cannot do the task due to an obvious physical impairment.

Participants are often curious as to how well they did. Although scoring does not take place during testing, the interviewer should provide general encouragement, and reassure each participant who asks that he/she did as well as others who have taken the tests. Do not indicate to the participant whether specific responses are correct or incorrect.

Most participants will feel challenged, however, some may feel insecure and others possibly hostile. It is important for the interviewer's attitude to be friendly, non-threatening, reassuring and supportive throughout the testing. Examiners should be sensitive to provide positive reinforcement (e.g., "you're doing fine") after each test if appropriate.

Complete the Participation Identification Section, Part A, of the NEURO FORM Questionnaire before the cognitive assessment. Complete the Cognitive Assessments Summary Section, Part B, of the Cognitive form Questionnaire after the participant has finished the cognitive tests and left the exam area.

Record a three-letter-initial identification code of the interviewer completing this form corresponding to the interviewer's first, middle and last name. If an interviewer does not have a middle name, write in an "X". For example, John Smith's identification code would be "JXS".

Introduction to the Cognitive Assessment

Begin the introduction of the DPPOS cognitive assessment with the following script,

English Script: *"In this follow-up assessment of DPPOS, we will repeat the cognitive tests that you previously underwent with small changes. We only ask you to do your best and put your best effort. Please.know.that.no.one.performs.perfectly.in.these.tests".*

Spanish Script: *" En esta evaluación de seguimiento de DPPOS, vamos a repetir las pruebas cognitivas que usted hizo previamente con algunos cambios. Solo le pedimos que haga lo mejor posible y ponga su mejor esfuerzo. Por favor sepa que nadie sale perfecto en la pruebas"*

If a participant asks about the measures/tests or is concerned about their memory, say:

English Script: *"The tests used to assess memory and cognition in DPPOS are for research purposes only. They are not meant to be used for clinical diagnosis. In others words, this is not information that a doctor could use to treat you. However, if you are concerned about your memory or mental abilities in general, we will provide you with names and contact information of specialists that can make a clinical evaluation and address your concerns."*

Spanish Script: *"Las pruebas que usamos para medir la cognición y memoria en DPPOS son solamente para propósitos de esta investigación. No están diseñados para hacer un diagnostico medico. En otras palabras, no provee información que un doctor podría usar para su tratamiento medico. Sin embargo, si usted esta preocupado por su memoria o habilidades cognitivas, podemos darle nombres e información de especialistas que pueden llevar a cabo una evaluación medica y atender a sus preocupaciones."*

It is recommended that each DPPOS site identify specialists in cognitive disorders in case a participant wants to have a clinical evaluation of cognition.

This manual is of a modification of the one previously used in DPPOS. A manual for the 3MS is publicly available and has been provided with authorization from the creators of the 3MS, Evelyn Lee Teng, and Helena Chang Chui. Thus, pertinent sections of the 3MS manual have been copied below.

2.1. 3MS (ASSESSMENT A).

Please see next page.

General Considerations

Examiners should thoroughly familiarize themselves with the testing procedures and the scoring criteria before using the 3MS Test in formal assessment. The 3MS record sheet contains highly condensed information from this manual. Users of the record sheet must first study this manual carefully, otherwise misunderstandings of the condensed information on the record sheet can easily occur.

In the administration of the 3MS Test, **do not offer extra help or wait too long for responses.** Although sometimes it is appropriate to re-present or rephrase a question, in general if a subject gives an incorrect answer, says "I don't know," or is unable to give an answer, the examiner should just score accordingly and proceed to the next item.

Although time limits are set for some items, they are stated in the Manual and on the record sheet only for guiding the examiners in the pacing of the administration and in scoring. **Subjects should never be told of any time limit on any item.**

The 3MS should be administered in a quiet place with minimal distractions. If any temporary condition exists that may detract the subject from his or her optimal performance, such should be noted on the record sheet and in the test report. Other factors that might alter the interpretation of the test score as an indication of cerebral cognitive abilities should also be noted; examples include poor hearing, poor eyesight, impaired motor control, language barrier.

ADMINISTRATION AND SCORING OF THE INDIVIDUAL ITEMS

PLACE AND DATE OF BIRTH

Place: town _ , state _

Date: year _ , month _ , day _

This item is a measure of long-term memory. It is assumed that in the past the subject has had repeated opportunities to learn and report his/her date and place of birth.

First ask "**WHERE WERE YOU BORN?**", then ask "**WHEN WERE YOU BORN?**" If the subject gives only part of the answer (e.g., only the year of birth to the second question), ask for the missing information.

Scoring

One point for each entry. Obtain data from a reliable source as a scoring guide. In case there is no independent source of information, accept the subject's answer to be correct if (i) it is given promptly with confidence, (ii) it seems reasonable, and (iii) the subject's performance on the other test items are generally good. When in doubt, repeat the questions at the end of the test. For each component, if the subject's answers on the two occasions are consistent, score 1; otherwise, score 0. (The assumption is that if the subject does not remember and gives a guessing answer, it is unlikely that the two guesses will be identical.)

REGISTRATION # _ : (No. Presentations:)

#1: SHIRT _ , BROWN _ , HONESTY _

Tell the subject: "**I AM GOING TO SAY THREE WORDS FOR YOU TO REMEMBER. REPEAT THEM AFTER I HAVE SAID ALL THREE.**"

(Note: The subject is NOT told that "I am going to ask you to recall the three words later." Such an instruction may encourage rehearsal and make the general performance level of later recalls too high.)

Consider using different versions of three words (i) for consecutive subjects and (ii) when the same subject is tested repeatedly.

Record the version number in "# _ :". Circle the presented words in the two recall items on the record sheet; this will help make the administration and scoring of these two later items easier.

Say the three words distinctly at the rate of 1.5 sec. per word.

If the subject repeats after each word, request repetition of all three items at the end of your presentation ("**Tell me the three words again**") and score according to the responses to this request.

Some subjects will interrupt (typically with a question, e.g., "What is the first word?") during the presentation of the three words. Do not stop to respond. Continue to finish the presentation of the three words, then ask: "What three words do you think I have just said?" Score according to the answer to this question.

If the subject cannot repeat all three words correctly, re-present all three words, up to three times. Then, whether or not the subject can repeat all three words, proceed to the next item.

During the first re-presentation of the three words, it is advisable to clarify the words to help understanding. For example: "Let me say the three words again. They are...SHIRT -- what you are wearing, BROWN -- a color, and HONESTY -- to be truthful; telling the truth. Now say the three words again.")

Enter the total number of presentations given in "(No. Presentations: _)" (The maximum number is 4.)

Scoring

The score for registration is the number of items correctly reported in whatever order after the first presentation. Accept minor variations from the presented word (e.g., sock for socks, honestly for honesty) as correct.

MENTAL REVERSAL

5 to 1 (Can _ Can't _ do 1 to 5)

Accurate 2
1 or 2 errors/misses 1
More than 2 errors/misses 0

DLROW (Can _ Can't _ do forward)

0 1 2 3 4 5

This item has two parts: counting backwards from 5 to 1, and spelling WORLD backwards. For each part, ask the subject to do the forward version first, coach once if needed.

First say: "COUNT FROM 1 TO 5." If the subject can do this, check "Can _ ", otherwise check "Can't ".

If the subject can count from 1 to 5, say "NOW COUNT BACKWARDS FROM 5 TO 1."

If the subject cannot count from 1 to 5, coach and ask the subject to repeat: Say "SAY 'ONE, TWO, THREE, FOUR, FIVE'" at the rate of 1.5 sec per digit. Coach only once, then ask the subject to count backwards from 5 to 1, even if the performance in counting forward is not perfect.

Score 2, 1, or 0 according to the stated criteria on the record form.

Next say: "SPELL 'WORLD'." Check the appropriate blank on the record form to indicate whether or not the subject can spell WORLD forward correctly. If not, coach once and ask the subject to repeat. Say "IT'S SPELLED W-O- R-L-D." If the subject does not repeat spontaneously, prompt with "Say 'W-O-R-L-D'." Pronounce the letters distinctly at the rate of 1.5 sec per letter. Whether or not the subject spells correctly after coaching, next say:

"NOW SPELL 'WORLD' BACKWARDS."

Score from 0 to 5, according to the following rules:

1) Write down the subject's response; read backwards and record the highest number of letters that are in correct relative order for WORLD. For example:

4 point responses: DLORW, DLWRO, DLDRW, DROW, DLOW, DRLOW.

3 point responses: DORW, DOLW, DORLW, DRLW.

2 point responses: DOR, DL, DW.

2) Give credit for the subject's self-corrections. E.g., if the subject says "D-R-L-O-W .. No! D-L-R-O-W," the score is 5.

3) If the subject says only one letter, score 1 if it is D, score 0 otherwise.

4) Subtract one point if there are more than five letters.

For example:

LDDLRO = 4 (for DLRO) - 1 = 3

LDOROL = 3 (for DRO) - 1 = 2

5) If the subject repeats W-O-R-L-D or part of it in the forward direction, score 0.

6) The lowest score is 0; do not give negative scores. For example, if the subject says "W-W-O-R-L-D", the score is 0 instead of { [0 (rule #5) - 1 (rule #4)] = } -1.

FIRST RECALL OF THREE WORDS

Spontaneous recall	3
After "Something to wear"	2
After "SHOES, SHIRT, SOCKS"	1
Still incorrect	0

Spontaneous recall	3
After "A color"	2
After "BLUE, BLACK, BROWN"	1
Still incorrect	0

Spontaneous recall 3
After "A good personal quality" 2
After "HONESTY, CHARITY, MODESTY" 1
Still incorrect 0

Ask **"WHAT THREE WORDS DID I ASK YOU TO REMEMBER EARLIER?"**

For each word not readily reported, provide category cuing, followed by multiple choices if necessary. Do not wait more than **3 sec.** for spontaneous recall, and do not wait more than **2 sec.** after category cuing, before providing the next level of help.

If the subject starts out giving an incorrect answer in the correct category (e.g., reports "shirt" or "coat" when the correct answer is "shoes"), proceed to provide the three alternatives for him or her to choose from, and score 1 if the choice is correct. If after given three choices the subject indicates that he or she still does not remember, score 0. Do NOT press for a guessing answer.

If the subject has not chosen the correct answer from the three choices, score 0 but do tell him or her the correct answer. This is for the benefit of the second recall to be requested later.

Whenever a subject has not reported all three words correctly without help (i.e., whenever the total score on first recall is < 9), say the three words once more before proceeding to the next item. However, subjects are NOT told that they will be asked to recall the three words again.

Example: (Assuming that the three words presented by the examiner are Shoes, Black, Modesty).

Examiner: "What three words did I ask you to remember earlier?"

Subject: "Shoe...." (3 sec. pause)

E: "Another word is a color." S: "Black!"

E: "That's right. Another word is a good personal quality."

S: "Honesty?"

E: "I'll give you three words to choose from--Honesty, Charity, Modesty."

S: "Honesty!" (Or: No response for 2 sec.)

E: "(No.) The word is 'Modesty'....The three words I asked you to remember are Shoes, Black, and Modesty."

Scoring

The order in which the three words are reported is not important.

Accept minor variations from the presented word (e.g., sock for socks, honestly for honesty) as correct.

For each word, score 3 for spontaneous recall.
2 for correct recall after cuing.
1 for correct identification from three alternatives.

For the above example, the scores are 3, 2, and 0 respectively for Shoes, Black, and Modesty.

TEMPORAL ORIENTATION

Year	Accurate	8
	Missed by 1 yr.	4
	Missed 2-5 yrs.	2
	Missed by > 5 yrs.	0
Month	Accurate or within 5 days	2
	Missed by 6 days to 1 mo.	1
	Missed by > 1 month	0
DATE (of the month)	Accurate	3
	Missed 1-2 days	2
	Missed 3-5 days	1
	Missed > 5 days	0
DAY (of the week)	Accurate	1
	Inaccurate	0

Season	Accurate or within 1 mo.	1
	Missed by > 1 mo.	0

Ask **"WHAT IS TODAY'S DATE?"** and probe for items not reported.

(e.g., "What year is this?")

For the season, do not accept "Christmas season," "rainy season," or similar responses. If the subject appears puzzled or gives an answer that is not one of the four seasons, provide the names of the four seasons for the subject to choose from and put the correct choice in the second position.

Scoring

Answers for year, month, and date of month are scored in a graded manner according to the closeness of the response to the correct answer. Follow the criteria listed above. For each sub-item, if the subject cannot answer, score 0.

For Season (SSN): Give 1 point if the answer is correct or if the change of the season occurred (or will occur) within 30 days and the subject reports the last (or next) season.

The seasons change around the 21st of March, June, September and December.

Example:

The correct date is March 3, 1991.
The subject reports Feb. 28, 1975.

Score for YR: 0. (1975 is more than 5 yrs. from 1991.)

Score for MO: 2. (February 28 is less than 5 days from March.)

Score for DATE: 1. (February 28 is within 3-5 days of March 3.)

SPATIAL ORIENTATION

State	0	2
County	0	1
City	0	1
Store/Hospital(Clinic)/ Home?	0	1

Ask "WHAT _____ ARE WE IN?"

For the last sub-item, ask "ARE WE IN A STORE, A HOSPITAL (/MEDICAL CLINIC), OR A HOME?" *

Present the correct choice in the middle. For example, when testing at a subject's home, ask "Are we in a store, a home, or a hospital?" If the correct answer (e.g., a senior-citizens' activity center) is not among the three alternatives given above, use it to replace the middle choice.

* A change has been made from the published paper, where the three choices are hospital, office building, and home. In many clinical settings the answer of either "hospital" or "office building" would be correct. The current three choices reduce the probability of being correct by chance.

Score according to the criteria listed above.

NAMING

For 3MS: Forehead _ , Chin _ , Shoulder _ ,
Elbow _ , knuckle _

This item tests whether or not the subject can promptly name the two objects and the five body parts. If the subject cannot name within **2 sec**, or if the answer is incorrect, do not help or question again; just score 0 and move on to the next part.

For the MMSE sub-items, the examiner picks up a pencil

and asks "WHAT IS THIS?", and then points to a watch and asks "WHAT IS THIS?"

For the 3MS Test sub-items, the examiner asks while pointing to the appropriate part on his or her own body: "WHAT DO YOU CALL THIS PART OF THE FACE? (pointing to the middle of the forehead) ... AND THIS PART? (pointing to the chin) .. AND THIS PART OF THE BODY? (pointing to the shoulder) ... AND THIS PART? (pointing to the elbow)... AND THIS PART OF THE HAND? (pointing to the knuckle)"

Score 1 point for each item named correctly **within 2 sec.**

FOUR-LEGGED ANIMALS (30 sec)

Ask "WHAT ANIMALS HAVE FOUR-LEGS? TELL ME AS MANY AS YOU CAN."

Start timing at the end of this request.

If the subject says "All animals have four legs," say "Tell me their names" but do NOT re-start the timing.

The first time an incorrect answer is provided, gently remind "I want four-legged animals." Do not correct for subsequent errors.

Discontinue after 30 sec. or after 10 correct responses, whichever occurs first.

If the subject gives no response in 10 sec. and there are still at least 10 sec. of remaining time, gently remind (once only): "What (other) animals have four legs?"

Score one point for each correct animal name. Different names for the same animal of different ages or genders count as one. (E.g., kitten and cat, puppy and dog, deer and doe.) Accept marginal cases such as monkeys, chimpanzees, baboons, and kangaroos as correct responses.

SIMILARITIES

ARM-LEG

Body part, limb, extremities	2
Long, bend, muscles, bones, etc.	1
Incorrect; DK; tells difference	0

LAUGHING-CRYING

Expressions of <u>feelings/emotions</u>	2
Other correct answer	1
Incorrect; DK; tells difference	0

EATING-SLEEPING

<u>Necessary</u> bodily functions	2
Other correct answer	1
Incorrect; DK; tells difference	0

Introduce this item by saying:

"AN APPLE AND A BANANA ARE ALIKE IN THAT THEY ARE BOTH FRUIT."

Emphasize the words "alike" and "both." Pause for 2 sec. for the subject to process this statement, then ask:

"IN WHAT WAY ARE ___ AND ___ ALIKE?" or:

" AND ___ ARE BOTH.....?"

For the first sub-item (arm and leg) only: If the subject's answer is less than 2 points, coach for a 2-point answer.

For the next two sub-items: No coaching. If the subject gives an incorrect similarity, or tells the difference, or says "They are different" or "I don't know," just score 0 and move on.

Scoring

Score 2 points for conceptual similarities which are primarily pertinent for both members of the pair. Score 1 point for other answers that are correct. In general, be lenient in awarding 1 point; subjects are given credit as long as they can see beyond the differences and come up with a reasonable answer. Examples:

Arm-Leg:

2 points: limbs, extremities, parts of body

1 point: bend, move, long, have bones

0 point: useful (Comment: too vague.)

Laughing-Crying:

2 points: (expressions of) emotions, feelings

1 point: expressions, sounds, involve the mouth

0 point: produce tears (Comment: laughing usually
Does not produce tears);

sometimes you laugh when you cry, sometimes
you cry when you laugh (Comment: this
statement is not about their similarity,
but about their relationship).

Eating-Sleeping:

2 points: necessary bodily functions; essential for
life

1 point: bodily functions, relaxing, "good for you,"
refreshing, enjoyable, daily activities,
"I like both."

0 point: I don't know (DK)

REPETITION

"HE WOULD LIKE TO GO HOME." 2
One or 2 missed or wrong words 1
More than 2 missed or wrong words 0

"NO IFS _ ANDS _ OR BUTS "

The intended function of this item is to assess attention and the ability to repeat orally presented verbal messages. The two sub-items respectively require a low and a high level of attention for correct response.

Tell the subject: "**REPEAT EXACTLY WHAT I SAY -- 'HE WOULD LIKE TO GO HOME.'**" After the response, say "**NOW REPEAT -- 'NO IFS, ANDS, OR BUTS.'**" Speak distinctly, but not particularly slowly.

Scoring

First sub-item: 2 points for perfect repetition.
 1 point if there is 1 or 2 missed or wrong words.

Second sub-item: For each of the three parts (no ifs; ands; or buts), 1 point for perfect repetition. Give no credit if the "s" is missed.)

READ AND OBEY "CLOSE YOUR EYES."

Closes the eyes without prompting 3
Closes the eyes after prompting 2
Reads aloud the command, either spontaneously or 1
 after prompting, but does not close the eyes
Neither reads correctly, nor closes the eyes 0

The command is printed in all capital letters, approximately 2.5 cm in height, within the top one third of the back-side of the record form.

Fold the sheet of paper one-third down to show the command and say "**PLEASE DO THIS.**" Keep the paper close to the surface of the table so that there is not enough lighting from behind to show the words on the front side of the recording sheet.

If the subject does not respond, or merely reads the command, point to the command and say "**DO WHAT THIS SAYS.**" Allow up to 5 sec. for response, then move on to the next item. As soon as the subject closes the eyes, say: "Thanks. You can open your eyes now."

Score according to the criteria stated above.

WRITING (1 minute)

HE WOULD LIKE TO GO HOME.

Fold the sheet of paper once more to show the blank, middle one-third of the sheet. Tell the subject:

"I WOULD LIKE TO HAVE A SAMPLE OF YOUR HANDWRITING. WRITE 'HE WOULD LIKE TO GO HOME.'"

Allow either cursive or printing. If the subject seems to have trouble remembering the sentence, dictate the sentence word by word as the subject writes.

Allow up to one minute for response, then move on to the next item. If at the end of one minute the subject is still working on the task in earnest, consider allowing him/her to finish for the sake of maintaining rapport and morale, but mark the 1 min. point on the product during scoring, and do not credit parts finished after 1 min.

Scoring

One point for each word, but do not score the first word "I/He". Score each word according to whether or not it can be readily identified without the context. For each word, score 0 if there is spelling error or incorrect mixed capitalization (e.g., I would Like to Go homE). Do not penalize if the subject prints all letters in the uppercase.

COPYING INTERSECTING PENTAGONS (1 minute)

	Each Pentagon:	
5 approx. equal sides	4	4
5 but un-equal (>2:1) sides	3	3
Other enclosed figure	2	2
2 or more lines	1	1
Less than 2 lines	0	0

	Intersection:
4-cornered enclosure	2
Not 4-cornered enclosure	1
No enclosure	0

Show only the lower one third of the sheet that contains the sample pentagons. For right-handed subjects, present the sample on their left side. For left-handed subjects, present the sample on their right side. This way the sample will not be blocked by the drawing hand.

Allow up to one minute for response, then move on to the next item. If at the end of one minute the subject is still working on the task in earnest, consider allowing him or her to finish for the sake of maintaining rapport and morale. Do mark the 1 min. point on the product during scoring, and do not credit parts finished after 1 min.

Sometimes the subject is not satisfied with the product and wants to try again. This is permitted, but do not re-start the timing. Score for the better product completed within one minute.

Score according to the criteria listed above.

THREE-STAGE COMMAND

**TAKE THIS PAPER WITH YOUR L (R) HAND,
FOLD IT IN HALF, AND
HAND IT BACK TO ME.**

This item tests the subject's ability in understanding, remembering, and executing a three-part command. The three parts of the command are spoken clearly in approximately 6 sec., without interruption, and are given only once. If the subject interrupts with "What did you say?" or the like, do NOT stop to respond; continue to finish the command, then say: "Do what you think I asked you to do."

Use a blank piece of paper for this test.

The first stage of the command asks the subject to take the pieces of paper with his or her **NON**-preferred hand (the hand not used in the preceding writing and drawing tasks).

The examiner holds the piece of paper in plain view of the subject while giving the command. Some subjects tend to reach for the paper immediately after hearing the first part. When this happens, the examiner should temporarily move his or her hand away from the subject to keep the paper out of reach while continuing to state the next two parts of the command without interruption.

After saying the command, the examiner should take care not to move the paper towards the subject before he or she reaches for it; this is to avoid providing non-verbal cues for the subject to take the paper.

Some subjects attempt to fold the paper with one hand. Do not disrupt if you think the subject can accomplish the task despite some clumsiness. If the subject is having considerable difficulty, say "You can use both hands now."

After the subject has taken (and folded) the piece of paper, the examiner should take care not move his or her hand towards the subject in a gesture to receive the paper until the subject has started to hand the paper back.

Again this is to avoid giving nonverbal cues.

Do not repeat any part of the command. If the subject requests the examiner to do so, say "SORRY, I CANNOT REPEAT. JUST DO WHAT YOU THINK I ASKED YOU TO DO." If the circumstances are such that it is desirable to oblige for the sake of maintaining a fragile rapport, score according to the response(s) executed before the repeat presentation of the command.

Scoring

One point for each part of the command.

First part: Score 0 if the subject uses the preferred hand.

Second part: Score 0 if the subject folds the paper more than once.

Third part: Score 0 if the subject simply puts the paper down instead of handing it back to the examiner.

The subject may fold the paper with both hands, and may hand back the paper with either hand.

SECOND RECALL OF THREE WORDS

(Clothing: SHIRT)	0	1	2	3
(Color: BROWN)	0	1	2	3
(Virtue: HONESTY)	0	1	2	3

Always administer this item, even if the subject has scored 0 on First Recall.

Ask **"WHAT THREE WORDS DID I ASK YOU TO REMEMBER EARLIER?"**

Follow the same testing and scoring procedure as for First Recall, except that at the end do not coach for the correct three words even when the score is not perfect.

2.2 Spanish English Verbal Learning Test (Assessment B)

The Spanish English Verbal Learning Test (SEVLT) is a measure of new learning and verbal memory. The participant is asked to recall a list of 15 common words over three trials. For each trial, the participant is read the list and asked immediately afterwards to recall as many of the words as they can. Next, a new distracter word list is presented and the participant is asked to repeat each word. After the presentation of the distracter word list, the participant is asked to recall the first list again.

The first 15-item word list is presented in three learning trials.

English Script: "First, I am going to read a list of words to you. I want you to listen carefully and try to remember the words as I read them. When I stop, I would like you to recall as many of the words as you can. You will not be able to remember all of the words so just do the best you can. You do not have to recall the words in the same order that I read them. Are you ready?"

Spanish Script: *"Primero, le voy a leer una lista de palabras. Quiero que escuche cuidadosamente y que trate de recordar las palabras a medida que las leo. Cuando me detenga, me gustaría que recordara tantas de las palabras como usted pueda. Tal vez, no podrá acordarse de todas las palabras, simplemente haga lo más que pueda. No tiene que recordar las palabras en el mismo orden que yo las leo. Listo (a)?"*

Say each word distinctly at the rate of ~ 1.5 seconds per word.

If participant repeats the words after you, say **"Just listen. Do not repeat after me."**

Spanish Script: *"No tiene que repetir las palabras, solo escuche."*

Script: **"Now tell me all of the words you can remember."**

Spanish Script: *"Ahora dígame todas las palabras que usted pueda recordar."*

Immediately after these instructions, start the stopwatch. Timing should be discrete to avoid creating anxiety or a sense of time pressure.

To record the words recalled, write out the words as they are being recalled in the appropriate column for each trial including repetitions and intrusions (words that were not on the list). Words do not have to be recalled in the order in which they were read.

Recalled words are considered correct only when stated in the language in which the examiner provided the words. If the participant begins to produce the recalled word in another language say **"Please tell me the word in English."**

Spanish Script: *"Por favor dígame la palabra en español. "*

Once the participant has produced as many words as he/she appears able to recall **or** after 15 seconds, with no response provide one prompt, **"Anything else?"**, in Spanish **"¿Alguna otra palabra?"** for additional words before going on to Trial 2.

Do not allow more than 60 seconds for recall for any trial.
The word list is repeated for Trial 2.

Script: "I am going to read the same list of words to you again. I want you to try to remember as many of the words as you can, including those you have recalled before. When I stop I want you to recall as many of the words as you can remember."

Spanish script: "Voy a leer la lista de palabras otra vez. Escuche cuidadosamente y cuando yo termine dígame tantas de las palabras como usted pueda recordar."

Present the 15-item word list.

Script: **"Now tell me all of the words you can remember."**

Spanish Script: "Ahora dígame todas las palabras que usted pueda recordar."

Discretely start the stopwatch.

To record the words recalled, write out the words as they are being recalled in the appropriate column for each trial. Include repetitions and intrusions. (Words do not have to be recalled in the order in which they were read.)

Once the participant has produced as many words as he/she appears able to recall or after 15 seconds with no response, provide one prompt, **"Anything else?"**, in Spanish **"¿Alguna otra palabra?"** for additional words before going on to Trial 3.

Do not allow more than 60 seconds for recall of Trial 2.

The word list is repeated for a final time in Trial 3.

Script: "I will read the same list again. Listen carefully and when I finish tell me as many of the words as you can remember."

Spanish script: "Voy a leer la misma lista de palabras una vez más. Escuche cuidadosamente y cuando yo termine dígame tantas palabras como usted pueda recordar."

Present the word list.

Script: "Now tell me all of the words you can remember."

Spanish Script: "Ahora dígame todas las palabras que usted pueda recordar."

Discretely start the stopwatch.

To record the words recalled, write out the words as they are being recalled in the appropriate column for each trial including repetitions and intrusions. Words do not have to be recalled in the order in which they were read.

Once the participant has produced as many words as he/she appears able to recall or after 15 seconds with no response, provide one prompt, **“Anything else?”**, in Spanish **“¿Alguna otra palabra?”** for additional items before presenting the Distracter list. Do not allow more than 60 seconds for recall of Trial 3.

Next, the new (Distracter) list of 15 words is presented.

Script: “I am going to read you a different list of words. This time, I want you to repeat each word out loud after I read it.”

Spanish script: “Ahora, voy a leer una lista diferente de palabras. Esta vez, quiero que repita cada palabra en voz alta después de que yo la lea.”

Present each word and pause for the participant to repeat it. If the participant does not repeat a word, prompt for the correct response. Do not correct any mispronunciations or errors during this trial, as the primary purpose of the words is to serve as a distraction, and participants will not be required to recall these new words at any point.

Following the presentation and repetition of the distracter items, immediately ask the participant to recall the 15 items from the first list presented.

Script: “Now, I want you to tell me as many of the words from the first list that I read to you as you can remember. That is the list that I read to you three times.”

Spanish script: “Ahora, quiero que me diga todas las palabras de la primera lista que yo leí como usted pueda recordar, la lista que leí tres veces.”

Discretely start the stopwatch.

Do not repeat the first list.

If the participant says that he/she cannot remember any of the words on a given trial, encourage him or her by saying, **“Just give it a try”** or **“Take a moment to see if any of the words come to mind”**.

Spanish Script: “Trate a ver si puede”, “Tome un momento a ver si alguna de las palabras le vienen a la mente.”

To record the words recalled, write out the words as they are being recalled in the appropriate column for each trial including repetitions and intrusions. Words do not have to be recalled in the order in which they were read.

Once the participant has produced as many words as he/she can recall, provide one prompt for additional items, say **“Anything else?”**. **Spanish Script: “¿Alguna otra palabra?” Or “See if you can think of anymore”**. **Spanish Script: “Trate a ver si puede pensar en otra mas.”** Do not allow more than 60 seconds for recall.

2.2.1. Spanish English Verbal Learning Test (Scoring and Discontinuation)

The number of correctly recalled words, repetitions and intrusions for each of the three learning trials (Trials 1-3,) and the delayed recall trial (Trial 4), is recorded on the Neurocognitive Summary Scoring Form by the examiner after the participant has left the exam area.

Types of responses

Correct: Recalled words are considered correct only when stated in the language in which the examiner provided the words.

Repetition: A repetition is scored each time any response (whether a target word or intrusion) is repeated in the same trial. If the participant appeared to be repeating responses as a way of self-cueing, do not score it as a repetition error.

Intrusion: A response is classified as an intrusion error when the word is not on the target list, that is the list of words presented over trials 1-3.

In the column “Resp Type” short for ‘Response Type’ record a “C” for correct words, record an “I” for an intrusion or record an “R” for a repetition next to each word recalled. An intrusion that is repeated is considered a repetition.

The following is an example of a set of responses after presentation of the word list, the response type, and how to record each response type.

Recall	Response Type	Record
Pan	Correct	C
Tea	Correct	C
Juice	Correct	C
Bananas	Intrusion (a word not on the list)	I
Beans	Correct	C
Beets	Correct	C
Pan	Repetition (of a word <u>on</u> the list)	R
Bananas	Repetition (of a word <u>not on</u> the list)	R
Pear	Intrusion (a word not on the list)	I
Coffee	Correct	C
Tea	Repetition (of a word <u>on</u> the list)	R
Total Correct		6
Total Repetitions		3
Total Intrusions		2

The SEVLT may be discontinued due to participant refusal or if the examiner determines that the participant is unable to perform the task due to a physical impairment such as hearing loss.

If discontinued, the reason is recorded in Section C, item 1a, of the Neurocognitive Scoring Summary Form.

2.3 Digit Symbol Substitution Test (Part c)

The Digit Symbol Substitution Test (DSST) is a measure of psychomotor speed and sustained attention. In this task, the participant is asked to translate numbers (1-9) to symbols using a key provided at the top of the test form.

Present the instructions deliberately and at a slow pace.

Hand the participant a pencil without an eraser. Place the digit symbol form in front of the participant, point to the key above the test items and read the script.

Script: "This last task is the digit-symbol task. Look at these boxes. Notice that each box has a number in the upper part and a special mark in the lower part. Each number has its own mark."

Spanish script: *"Esta última actividad es la actividad de dígitos-símbolos. Mire estas casillas. Note que cada casilla tiene un número en la parte de arriba y una marca especial en la parte de abajo. Cada número tiene su propia marca."*

Point to 1 and its mark, then to 2 and its mark.

Script: "Now, look down here to where the boxes have numbers in the top part, but the squares at the bottom are empty."

Spanish script: *"Ahora, mire aquí abajo adonde los cuadros tienen números en la parte de arriba, pero los cuadros de abajo están vacíos."*

Point to the sample items.

Script: "I want you to put in each of the empty squares the mark that should go there, like this."

Spanish Script: *"Quiero que coloque la marca que debe ir en cada uno de los cuadros vacíos, así."*

Point to the first sample item, then to the mark below the 2 in the key.

Script: "Here is a 2; the 2 has this mark. So I put it in this square, like this."

Spanish Script: *"Aquí hay un 2; el 2 tiene esta marca. Entonces, lo coloco en este cuadro vacío, así."*

Write in the symbol in the first sample square. Then say:

Script: "Here is a 1; the 1 has this mark."

Spanish Script: *"Aquí hay un 1; el 1 tiene esta marca."*

Point to the second sample item, then to the mark below the 1 in the key.

Script: "So I put it in this square."

Spanish Script: "Entonces, lo coloco en este cuadro."

Write in the symbol in the second sample square. Then say:

Script: "This number is 3; the 3 has this mark."

Spanish Script: "Este número es el 3; el 3 tiene esta marca."

Point to the third sample item, then to the mark below the 3 in the key.

Script: "So I put it in this square."

Spanish Script: "Entonces, lo coloco en este cuadro"

Write in the symbol in the third sample square.

After marking the first three samples items, say:

Script: "Now, you fill in the squares up to this heavy line."

Spanish Script: "Ahora llene usted los cuadros hasta que llegue a esta línea gruesa."

If the participant makes an error on a sample item or skips a box, correct the error immediately and review the use of the key. Continue to help (if necessary) until the seven sample items have been filled in correctly. Do not proceed with the test until the participant clearly understands the task. When the participant fills in a sample item correctly, offer encouragement by saying: "yes" or "right."

When the sample items have been completed successfully, say:

Script: "Yes, now you know how to do them."

Spanish Script: "Sí, ya sabe cómo hacerlo."

During the sample exercise, look to see if a left-handed participant blocks or partially blocks the key when filling in the marks. If this occurs, fold a separate template so that only the key is exposed and place it next to the participant's worksheet on the participant's right-hand side so that the extra key is aligned with the one blocked by the participant's left hand.

Have the participant use the separate key to complete the sample items and to take the actual test.

To begin the formal test, say:

Script: "When I tell you to start, you do the rest of them."

Spanish Script: "Cuando yo le diga que comience, haga el resto."

Point to the first test item and say:

Script: "Begin here and fill in as many squares as you can, one after the other, without skipping any. Keep working until I tell you to stop. Work as quickly as you can without making mistakes."

Spanish Script: *"Comience aquí y llene tantos cuadros que usted pueda, uno detrás del otro sin saltarse ninguno. Siga haciéndolo hasta que le diga que pare. Hágalo tan rápido como pueda sin cometer ningún error."*

Sweep across the first row with your finger and say,

Script: "When you finish this line, go on to this one."

Spanish Script: *"Cuando termine esta línea, siga con esta otra."*

And point to the first item in row 2.

Script: "Ready? Go ahead."

Spanish Script: *¿Listo? Comience."*

Discretely begin timing.

Do not correct any incorrect symbols.

If the participant omits an item or starts to do only one type (e.g., only the "1"s) say,

Script: "Do them in order. Don't skip any."

Spanish Script: *"Hágalos en orden. No salte ninguno."*

Point to the first item omitted and say:

Script: "Do this one next."

Spanish Script: *"Después, haga éste."*

Do not correct additional omissions.

If the participant gets to the end of a line and stops, say:

Script: "Please go on to the next line."

Spanish Script: *"Cuando termine esta línea, siga con esta otra."*

Give no further assistance except (if necessary) to remind the participant to continue until instructed to stop.

The examiner must sit quietly and minimize movements to avoid distracting the participant during this test.

Timing must be precise. At the end of 90 seconds, say:

Script: "Stop. That's good, thank you. That completes this set of tasks."

Spanish Script: "Deténgase. Así está bien, gracias. Eso completa este conjunto de actividades."

2.3.1 Digit Symbol Substitution Test (Scoring and Discontinuation)

After the participant has left the room, the examiner scores the DSST. Record 1 point for each correctly drawn symbol completed within the 90-second time limit and record this number on the Cognitive Scoring Summary Form.

A response is scored as correct if it is clearly identifiable as the keyed symbol, even if it is drawn imperfectly (e.g., "v" instead of "u") or if it is a spontaneous correction of an incorrect symbol.

Credit is not given for items completed out of sequence (e.g., doing all the 1's). Blank spaces between two completed items receive no credit.

If there is more than one symbol in the box, and one is correct, give the participant credit. The seven sample items are not included in the participant's score.

The DSST may be discontinued due to participant refusal, task difficulty (e.g., the participant never fully understood the instructions), or if the examiner determines that the participant is unable to perform the task due to a physical impairment such as a motor or visual problem.

If discontinued, the reason is recorded in Section C, item 3.a. of the Neurocognitive Scoring Summary Form.

3. QUALITY CONTROL ISSUES AND PROCEDURES

3.1. Training, Pre-certification, Certification and Recertification

A flowchart of the neurocognitive assessment training, pre-certification, and certification is included in the following page.

Prior to the next DPPOS examination, examiners will train to a common level of proficiency in the administration and scoring of the neurocognitive measures. A training video for the SELVT and DSST can be obtained by emailing jal94@cumc.columbia.edu.

One Master Tester per site, usually the main site study coordinator, was pre-certified at the Central Training meeting in March of 2016. New master testers will be pre-certified as necessary if there is staff turnover. The Cognitive coordinating center expects that candidates for certification will review training materials before training meetings so that central training activities are mostly limited to clarification of doubts rather than full training. We call the completion of central training and preliminary demonstration of proficiency *pre-certification*.

In order for testers to be pre-certified, they must demonstrate 80% proficiency in neurocognitive testing administered to a trainer from the Cognitive Coordinating Center at the central training meeting.

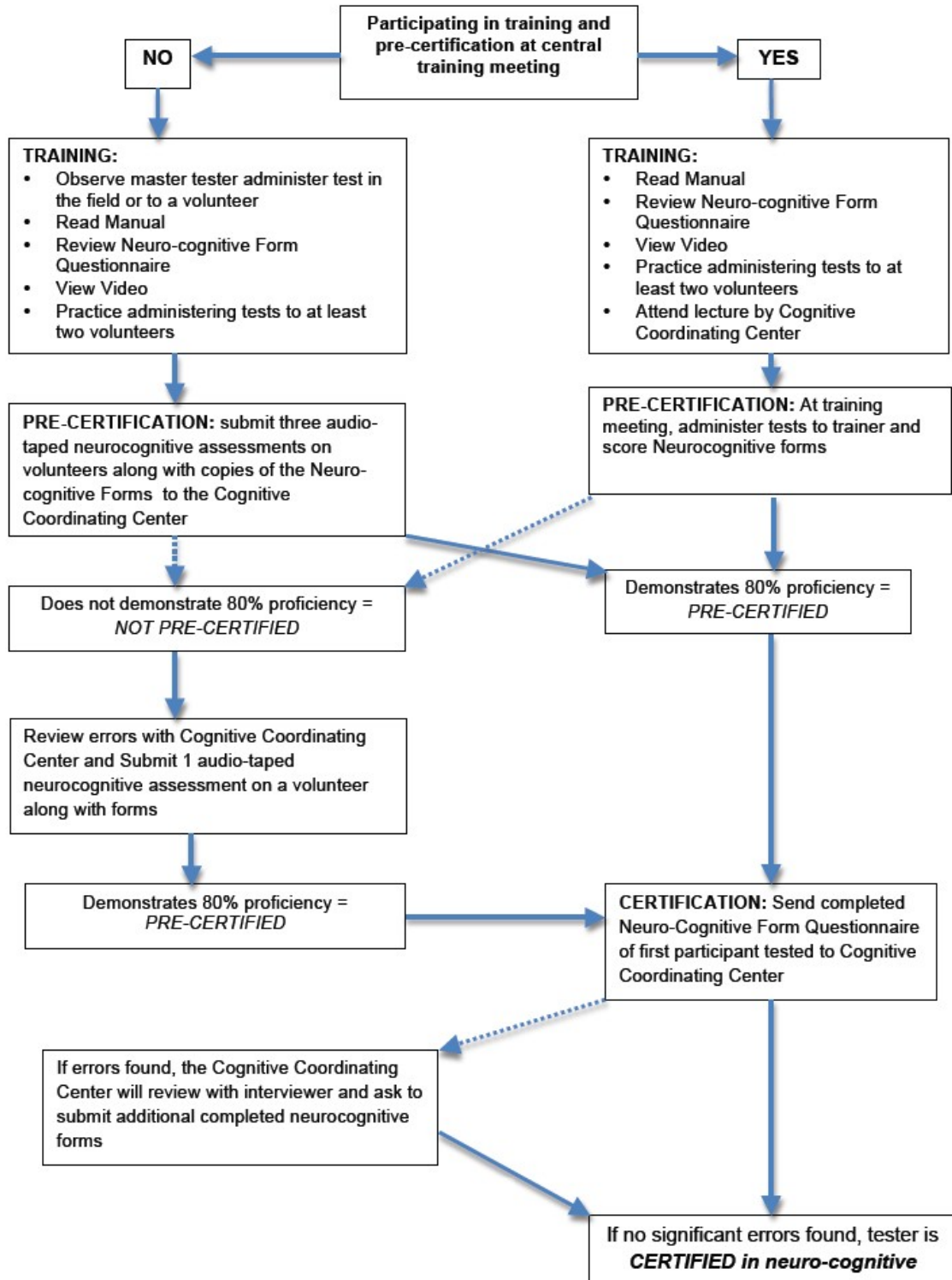
Coordinators and examiners who meet criteria for pre-certification during the one-on-one sessions will be required to submit a copy of the Neurocognitive forms of the first participant tested to the Columbia University Cognitive Coordinating Center. If no significant errors are found they will be *certified* in administration of the neurocognitive testing.

Coordinators and examiners that are deemed to need further training after a central pre-certification session will be required to submit 1 audio-taped neurocognitive assessment on a non-participant. If this audio-taped assessment along with the scored cognitive form questionnaire meets criteria for pre-certification, examiners will be required to submit a copy of the scored cognitive forms of the first participant tested to the coordinating center in order to be certified.

Examiners who do not attend the central training meeting will be trained by their site's master tester. The candidates will obtain approval from the field center master tester to submit three audio-taped neurocognitive assessments along with copies of the associated test forms to the Columbia University Cognitive Coordinating Center (CUCCC) for review for pre-certification. Pre-certification assessments are NOT to be performed on DPPOS participants. Examiner pre-certification for the neurocognitive portion of the DPPOS exam is achieved if no significant errors are found by the Cognitive Coordinating Center. Once pre-certified, certification will be achieved after review of the testing forms of the first DPPOS participant assessed. Coordinators and examiners that are deemed to need further training will be required to submit 1 audio-taped neurocognitive assessment on a non-participant. If no significant errors are found on this audiotaped assessment along with the scored neurocognitive Form Questionnaire, the examiner will meet criteria for pre-certification.

Maintaining proficiency in the administration of the neurocognitive measures requires regular exposure to the protocol. In order to maintain certification, examiners should administer the cognitive assessments at least twice per month. These can be administered to a volunteer if it is not possible to administer the cognitive tests to a participant at least twice a month.

FLOWCHART OF NEURO-COGNITIVE ASSESSMENT TRAINING, PRECERTIFICATION, AND CERTIFICATION



3.1.1. Training, Pre-certification, and Certification in Spanish.

Only persons fluent in Spanish can be certified for the administration of the neurocognitive battery in Spanish. Procedures for training, pre-certification, and certification in the administration of the neurocognitive battery in Spanish are similar to those in English described above. Once an interviewer is pre-certified in English, they only need to submit one taped assessment in Spanish on a volunteer to assess Spanish fluency. If an interviewer is not deemed to be fluent in Spanish on the audiotape they will not be pre-certified for administration of the cognitive battery in Spanish and may not be eligible for further training. Certification of administration of neurocognitive assessment in Spanish will occur after submission of the forms of the first actual study participant interviewed in Spanish.

3.2 Quality Control

Copies of 10% of the cognitive assessment forms will be sent to the Columbia University Cognitive Coordinating Center. The Neurocognitive Form Questionnaire will be reviewed to ensure accuracy of recorded responses and scoring.

Notes about any inconsistencies and errors will be sent to the field center lead examiner or study coordinator. Test score means and standard deviations are regularly tracked and reported for each, allowing detection of outliers and investigation of possible systematic differences by examiner.

Also, general feedback pertaining to all examiners is provided on regularly scheduled conference calls involving field center study coordinators. These calls also provide an opportunity to discuss and problem-solve any exam issues that arise.

Last, the site coordinators will conduct field observations to assess examiner performance and ensure an optimal testing environment.

A quality control report with statistics of errors found during quality control procedures will be generated on a quarterly basis or as required by the DPPOS Coordinating Center.

3.3 General Training Guidelines for Site Coordinators/Lead Examiners.

The site coordinators/lead examiners will train new examiners with strict adherence to the following guidelines:

1. Training.

- a. Coordinator/lead examiner will email Danurys Sanchez, dls167@cumc.columbia.edu at the Cognitive Coordinating Center and the interviewer an acknowledgement that the interviewer's training has begun.
- b. Interviewer reviews updated forms & manual.
- c. Coordinator/lead examiner and interviewer will review forms/manual and answer any questions.

4. EXAMPLES OF FREQUENT QUESTIONS AND ANSWERS ABOUT COGNITIVE ASSESSMENTS.

The following are examples of frequently asked questions (Q) and answers (A) that might help avoid errors.

4.1. GENERAL ADMINISTRATION Q & A'S

Q: Yesterday we had a participant whose first language is Spanish but is fluent in English. All of the previous questionnaires have been given in English. After the first round of the SEVLT he said he could remember things much better in Spanish. He did not do well. I think he may have just felt anxious about being tested. We do not have a bilingual tester on staff. Should I make a comment on his form about this?

A: The participant's native language being different than the language of administration may be a notable factor in the participant's performance. Please make a note on the form.

Rule: Administer the complete battery in the language chosen by the participant as his preferred language of administration regardless of native language and language tested previously. Do not switch language of administration from one task to the next.

Q: I did a Cognitive Exam on a person today who is blind in one eye. She is able to see with glasses, but it is hard for her. I gave her the Digit Symbol sheet and asked her if she could see it and she said yes, so I answered the vision question as adequate. However, when she was doing the test, it did take her longer than other people to focus on the symbols. Is there anywhere I should note that this was true. I could put a comment into the data entry system but I'm not sure you would see that comment.

A: Please rate vision as inadequate.

Rule: Rating of vision is subjective and it is based on what the participant says AND your observations while testing the participant. They should attempt each test and if they can't do it, explain why.

Q: My participant today had trifocals on. He does not wear separate reading glasses but commented that for a timed test and the lines in his glasses (3) he found his glasses a disadvantage. How do you want me to report his vision? Adequate or inadequate?

A: Although participant was wearing their glasses, their vision was impaired. Therefore their vision will be rated as inadequate.

Rule: Rating of vision is subjective and it is based on what the participant says AND your observations while testing the participant. They should attempt each test and if they can't do it, explain why.

Q: I was going to start my certification taping and realized our old cassette tape recorder is no longer functioning. However, we do have microcassette recorders here. Can I send a microcassette tape?

A: Yes

Rule: Cassette, microcassettes, CDs, and electronic files (windows and apple compatible) are all acceptable.

Q: We wanted to know if we could give the subject some sort of acknowledgment of their efforts after each test. If so, what would be acceptable?

A: Yes. You can acknowledge by saying something about their efforts and not their actual performance. You can say "you are doing as well as anyone else who has taken this before." Also you can say "Just try your best."

Rule: The interviewer should provide general encouragement, and reassure each participant who asks that he/she did as well as others who have taken the tests

4.2. SPANISH ENGLISH VERBAL LEARNING TEST (SEVLT) Q & A'S

Q: I have a pt. that said "lentil" instead of ladle four times. I believe it was a true recall. The participant admitted to not knowing what a ladle was. Can I count that in the participant's favor?

A: No - clinically important but research-wise it is not admissible. It is an intrusion.

Rule: Do not correct any mispronunciations or errors. Write down exactly what the participant recalls.

Q: My participant today had excellent recall of words. In the 4th trial, she recalled 15 perfectly and then paused. She had time left and I was not 100% sure she had mentioned them all so I said, "Anything else?" She then began repeating words. Unless you tell me differently, I will not count the words that she said after she gave the complete list. She thought she had said them all but after my comment she kept going.

A: Please do not count the words as repetitions.

Rule: If the participant appeared to be self-cueing or going over what they had just said, do not score it as a repetition.

Q: On the SEVLT I gave the participant 30 seconds on the 1st and 2nd recall trials. I realized it at that point and repeated the list of words and allowed her 60 seconds for recall Trial 2. I then repeated the list another time (4th) giving her 60 seconds for recall Trial 3. So in the end, instead of hearing the list 3 times before the distraction list she heard it 4 times. She seemed to be finished on the first trial after 30 seconds so I don't think I really cut her off with the shorter time. Her first recall trial was counted. Her second recall trial was not counted. She was given another chance for 60 second recall Trial 2. Trial # 3 was done correctly but by then she had heard the list 4 times. I don't know if you can count this or if it needs to be thrown out. Let me know how you want to proceed.

A: Please count it do not throw it out.

Rule: If the participant was able to finish the test and all lists were administered, please score it and make a note on the form.

Q: I have a question about scoring the SEVLT. Often participants will say as they are remembering words: Did I say cabbage?...ladle?... Or I said cabbage, right? Or I know I said cabbage, peach, ladle...When posed as a question I have been recording it. I do not answer the question. I score it as a repeat b/c they seem not to know if they have said it. If they seem like they are just thinking out loud, "I said cabbage, ladle, juice..." I do not record it, b/c they seem to be doing a self-review. However, today the pt. said to herself a few words she had said plus one she had not said. Previously she said pear and on her mini recall to herself she said peach. What is the correct way to handle these situations?

A: These are not repetitions.

Rule: A repeat is only recorded if the person is saying the word again "as if" they never said it before. Give benefit of the doubt. Do not record and count as repetition if they are asking a question.

Q: I have noticed that pts begin to pluralize certain words, especially since beans and beets are plural. I had someone today say peach and then peaches later in trial 2 and 4. Please advise if I should mark this as an error or as an intrusion.

A: These are correct.

Rule: Plurals are correct responses.

Q: When I administer the assessment - the following occurs during the Spanish English Verbal learning Test (SEVLT): I have noticed that many of our volunteers "think out loud". You previously recommended that I not write the items on the scoring form that our participants were saying out loud - when they were "thinking out loud". To date, I have not done this. My issue is this... Sometimes when the volunteers are "thinking out loud" - they actually say a word that is on the recall list that they have not said during the current recall, but they think they have said it. (They may have mentioned it during a previous recall, but it has not been mentioned during the recall they are currently on).

So... How should I score this? Do I record the item - since it is on the recall list and it is verbalized to me? OR Do I not record the item - since it is mentioned to me as the person is "thinking out loud"?

A: Write it and score as correct.

Rule: As long as they recall a word while "thinking out loud" the pt. should get the word scored correctly.

Q: if a patient misunderstands you and says beach instead of beets and you ask her about it and she misunderstood, can I count that as correct?

A: Count it as an intrusion. If the error persists write a note to us about this participant's assessment.

Rule: Do not correct any mispronunciations or errors, write down exactly what the participant recalls

Q: What do you say to a patient who asks during the SEVLT "Have I already said beets?"

A: "I am unable to tell you that. Anything else?"

Rule: Do not indicate to the participant whether specific responses are correct or incorrect.

Q: Is it ok on the SEVLT if a participant says green beans instead of beans? Is that a correct response?

A: Green beans is an intrusion.

Rule: A response is classified as an intrusion error when the word is not on the target list.

Q: If a participant repeats a word, and then quickly says "I already said that" , does it count as a repetition?

A: No.

Rule: if the participant acknowledges that they have already said a given word it does not count as a repetition. This is a way of self-cueing.

Q: If during the SEVLT they add a plural to the word "Pan" and say "pan" first try and pans on the 2nd and 3rd trials. Is that an intrusion or correct?

A: These are correct, not an intrusion.

Rule: Plurals are correct responses.

Q: One question related to the SEVLT is if the pt. says "news" instead of "newspaper", we assume that we score that response as an intrusion. However, we thought that we would just make sure.

A: The word "news" would be an intrusion.

Rule: A response is classified as an intrusion error when the word is not on the target list.

4.3. DSST Q & A's

Q: On the digit symbol test, a participant put marks that look like a cross between a V and a U (like a U with a pointed bottom) in the #5 boxes. Should these be counted as correct?

A: This response is correct.

Rule: A response is scored as correct if it is clearly identifiable as the keyed symbol, even if it is drawn imperfectly (e.g., "v" instead of "u") or if it is a spontaneous correction of an incorrect symbol.

Q: On the digit symbol test: For a box with 2 in the top, the participant put a mark below it that looked like a minus sign with a distinctly present, but very small vertical line bisecting upward from it. The vertical line was not very tall in relationship to the length of the horizontal line. Should I still count it as correct since there is somewhat of a vertical line?

A: Yes, please count it as correct.

Rule: A response is scored as correct if it is clearly identifiable as the keyed symbol, even if it is drawn imperfectly.

Q: One of our pt. who is very fast and did excellent on the tests ended up writing the symbol for number 5 so fast that it looks like a capital U rather than the angular symbol it should be. How do I score this? Are these errors? He will have 7 errors if so and since 5 was not part of the sample test I was unable to catch it during the sample prep and no corrections are provided in sample script.

A: This happens very often with fast participants. These are not errors. No need to cue or correct the participant. This is fine.

Rule: A response is scored as correct if it is clearly identifiable as the keyed symbol, even if it is drawn imperfectly.

Q: A participant filled out #7 once correct with the proper symbol and then proceeded to fill in other #7 symbols as if it were "A" so they crossed midway with a line through the upside V. Shall I count these as errors even though they have an upside V but then added a slight line too?

A: These are errors.

Rule: A response is scored as correct if it is clearly identifiable as the keyed symbol.

Q: I tested a pt. yesterday with Parkinson's. By the end of the test their hand was obviously getting tired. Some of their symbols were a little off, but as I was watching them I could tell they meant to extend the line little further but did not press down hard enough, or in another case extended the line a little too far. They did not correct the mistakes or maybe did not notice. Are these errors?

A: No.

Rule: A response is scored as correct if it is clearly identifiable as the keyed symbol.

Q: On the Digit Symbol test, if a participant skips a box and continues on and a staff person doesn't notice the skip so doesn't prompt the participant to fill in the empty space, how do we score that? My thinking is we would not count the skipped box but would count the boxes completed correctly after the skip. And then the staff person should be more careful about watching. Is that correct?

A: Yes, that is correct.

Rule: Blank spaces between two completed items receive no credit.

Q: How do you score the Digit Symbol Test if a participant puts the triangle with the correct number but puts a line between the two bars of the "tent" of the V making it look like an A?

A: This is an incorrect response and it would not get counted as correct.

Rule: A response is scored as correct if it is clearly identifiable as the keyed symbol.

Q: I had a pt. who, on the Digit Symbol test, marked a cross mark across the ^ which made it look like an "A".

A: The digit symbol mark is incorrect.

Rule: A response is scored as correct if it is clearly identifiable as the keyed symbol.

Q: A participant was doing the digit-symbol test and marked a wrong symbol associated with a number; realized it themselves; and rather than erasing, the participant marked over the original incorrect symbol with the correct symbol before I could stop them. Should I count this response as wrong or allow the self-corrected response?

A: This response is correct.

Rule: A response is scored as correct if it is clearly identifiable as the keyed symbol, even if it is drawn imperfectly (e.g., "v" instead of "u") or if it is a spontaneous correction of an incorrect symbol.

5. 3MS quizzes

**REVIEW AND QUIZ ON THE ADMINISTRATION AND SCORING OF
THE 3MS TEST**

Form A Form A Form A

(Updated 2006)

Evelyn Lee Teng, Ph.D. (eteng@usc.edu)
Professor Emeritus, Department of Neurology,
University of Southern California Keck School of Medicine

THE PURPOSE OF THIS REVIEW AND QUIZ IS (a) TO HELP YOU FURTHER FAMILIARIZE YOURSELF WITH THE ADMINISTRATION AND SCORING OF THE 3MS TEST AND (b) TO PROVIDE MORE CLINICAL EXAMPLES THAT HAVE NOT BEEN INCLUDED IN THE MANUAL.

WHEN YOU TAKE THIS QUIZ, YOU CAN REFER TO THE RECORD FORM BUT NOT THE MANUAL. IF YOU HAVE MADE **THREE OR MORE** ERRORS, STUDY THE MANUAL MORE THOROUGHLY AND TAKE THE QUIZ AGAIN. IF YOU HAVE MADE ONE OR TWO ERRORS, YOU CAN JUST ASK FOR THE CORRECT ANSWER OF THE MISSED ITEM(S).

FOR EACH ITEM, FIRST READ ALL FOUR CHOICES, THEN CHOOSE THE BEST ONE AND RECORD YOUR CHOICE ON THE SEPARATE ANSWER SHEET.

THIS IS A RE-USABLE BOOKLET. DO NOT LEAVE ANY MARKING IN IT AND RETURN IT TOGETHER WITH YOUR ANSWER SHEET.

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1. In general (unless indicated otherwise on specific items), whenever the subjects' responses indicate that they do not know the answer to your inquiry, you should
 - A. Encourage them to guess.
 - B. Allow plenty of time and encourage them to try harder.
 - C. Provide multiple choices for them to choose from.
 - D. Score 0 and move on to the next item.

2. If you ask "Where were you born?" and a subject gives only the correct name of the town, you should
 - A. Credit 1 point.
 - B. Follow up with "What State was it in?" and credit another point if the answer is correct.
 - C. Do both A. and B.
 - D. Do neither A. nor B.

3. For the items Place and Date of Birth: If you do not have independent and reliable sources for correct answers, you may assume the subjects' answers are correct
 - A. If the answers are reasonable and are given promptly with confidence, and the subject's general performance on the 3MS test is good.
 - B. If they give the same answers when you repeat the questions at a later time.
 - C. Either A. or B.
 - D. Under no circumstance

4. For the Registration item: When you present three words for the subjects to repeat, sometimes they interrupt by asking "What did you say?" before you have finished saying all three words. When this happens, you should
- Ignore the interruption and continue to present the remaining words, then ask "What do you think I just said?"
 - Stop, say "Sorry I cannot repeat," then continue to present the remaining words.
 - Stop, say "Please do not interrupt," then continue to present the remaining words.
 - Stop and re-present the three words.
5. If you have presented "shirt, brown, honesty," and the subject's response is "shirts, blue, honestly," the score (for the Registration item) should be
- 3 — —
 - 2
 - 1
 - 0
6. On repeating WORLD backwards: If the subject says LDDLRO, the score should be
- 3
 - 4
 - 5
 - 6

7. On the recall of three words: You have presented "Shirt, Brown, Honesty" and the subject recalls "Brown, Shirts, Honestly." In scoring, points should be subtracted for
- A. The changed sequential order of the three words.
 - B. The minor differences between the presented and the recalled words (shirts for shirt, honestly for honest).
 - C. Both A. and B.
 - D. Neither A. nor B.
8. You have used Charity among the three words for repeating and recall. A subject spontaneously recalled Honesty.
- A. You score 2, because Honesty belongs to the same category as Charity (both are good personal qualities).
 - B. You tell him that you have asked him to remember a different word about a good personal quality; score 2 if he answers Charity then.
 - C. You ask him to choose from "Honesty, Charity, and Modesty;" score 1 if his choice is correct.
 - D. None of the above is correct.
9. At the end of the first recall of the three words, you should say the three words once more
- A. When a subject scores less than 3 on any word.
 - B. When the subject scores less than 3 on all three words.
 - C. When the subject scores 0 on all three words.
 - D. Under none of the above circumstances.
10. On February 28, a subject says the date is March 1. The scores should be
- A. 0 for Month; 0 for Date.
 - B. 0 for Month; 1 for Date.
 - C. 1 for Month; 1 for Date.
 - D. 2 for Month; 2 for Date.

11. The date is December 15. The winter season will officially start on December 21. When asked about the season, a subject answers "This is the Christmas season."
- A. You score 0 and move on.
 - B. You ask: "Are we in Spring, Summer, Fall/Autumn, or Winter?" Score 1 if the subject chooses either Fall/Autumn or Winter.
 - C. You provide the names of the four seasons and score 0 if the subject chooses Winter.
 - D. None of the above is correct.
12. You are interviewing a subject at a Senior Center. For the multiple-choice question on spatial orientation, you ask:
- A. Is this place a senior center, a hospital, or a home?
 - B. Is this place a store, a senior center, or a home?
 - C. Is this place a store, a hospital, or a senior center?
 - D. Is this place a store, a hospital, a senior center, or a home?
13. When asking for the names of body parts, score 0 if the subject takes more than _ to come up with the name.
- A. 2 sec.
 - B. 3 sec.
 - C. 4 sec.
 - D. 5 sec.

14. When asked to name four-legged animals, a subject says:
"Cat, dog, monkey.....cat....puppy." The score should be
- A.5
 - B.4
 - C.3
 - D.2
15. A subject says an arm and a leg are not alike. You should
- A. Score 0.
 - B. Teach for a 2-point answer.
 - C. Do both A. and B.
 - D. Score 0 and teach "They both have bones and muscles."
16. A subject says that laughing and crying both involve the mouth. What you do is to
- A. Score 2.
 - B. Score 1 and teach that they both express feelings.
 - C. Score 1 and teach that they are both expressions.
 - D. Score 1 and do not teach.
17. When asked to follow the written command CLOSE YOUR EYES, a subject reads the statement but does not close her eyes.
- A. You say "Please do what it says" and score 3 if she closes her eyes.
 - B. You say "Please do what it says" and score 2 if she closes her eyes.
 - C. You say "Please do what it says" and score 1 if she closes her eyes.
 - D. You say "Please do what it says" and score 0 if she still does not close her eyes.

18. If a subject's writing to the dictated sentence is "He wood like to Go homE," the score should be
- A.5
 - B.4
 - C.3
 - D.2
19. In copying the pentagons, a subject is not happy with her product and wants to make a second attempt.
- A. You let her start again and you re-start the one-minute timing interval.
 - B. You let her start again but you do not re-start the one-minute timing interval.
 - C. You let her start again but discount the second product in scoring.
 - D. You gently tell her that a second attempt is not permitted.
20. You say to a right-handed subject: "Take this piece of paper with your left hand--" and she interrupts with "Which hand?"
- A. You continue with the instruction "--fold it in half, and hand it back to me." You then say: "Sorry I cannot repeat. Just do what you think I asked you to do."
 - B. You stop, answer the question, then continue with the remaining parts of the comand.
 - C. You say: "Please, do not interrupt." You then continue with the remaining parts of the command.
 - D. You do none of the above.

21. On the Three Commands item, a subject takes the piece of paper with her preferred hand, folds it in half with both hands, then puts it down on the table. Her score for this item should be
- A.3
 - B.2
 - C.1
 - D.0
22. You ask for a second recall of the three words
- A. Only when the subject has scored 3 for each word during the first recall.
 - B. Only when the subject has scored less than 3 for any word during the first recall.
 - C. Only when the subject has scored less than 3 for all three words during the first recall.
 - D. Regardless what has the subject scored during the first recall.

1. When we test subjects,
 - A. It is important to find out their true ability level.
 - B. It is important to protect them from excessive stress and sense of failure.
 - C. Both A. and B. are important.
 - D. It is equally important to make/keep them happy.
2. In general (unless indicated otherwise on specific items), when the subjects' responses are incorrect, you should
 - A. Let them know that the response is incorrect, give them another chance to respond, and score according to the second attempt.
 - B. Tell them that the response is incorrect, but do not provide a second chance.
 - C. Let them know that the response is incorrect and tell them the correct response.
 - D. Do none of the above.
3. On "When were you born?": If the subject gives only the correct year of birth, you should
 - A. Credit 1 point for the year.
 - B. Ask for the month and date of birth.
 - C. Do both A. and B.
 - D. Do neither A. nor B.
4. A subject's report for her place of birth differs from that provided by her son who professes that he really is not sure.
 - A. You can assume that the subject's report is correct if she has answered readily with confidence, her answer seems reasonable, and her general performance level is good.
 - B. You can assume that the subject's report is correct if she gives the same answers when questioned again at a later time.
 - C. Neither A. nor B. is acceptable.
 - D. Both A. and B. are acceptable.

5. On the Registration item: When you say three words for the subjects to repeat, some of them will repeat after each word. When this happens, your correct response is to
- A. Stop immediately and tell them "Wait until I have said all three words", then re-present the three words.
 - B. Finish saying the three words, then request "Repeat the three words once more" and score according to the responses to this request.
 - C. Say nothing and score 1.
 - D. Do something other than A., B., or C.
6. When subjects cannot repeat all three words correctly after your first presentation, (i) you must re-present the three words, up to three more times. (ii) In order to help them register all three words correctly in the repeat presentations, it is now permissible to elaborate on the missed words. E.g., "**shirt**--(point and say: 'What I am wearing'), **brown**--this color (point to a brown-colored surface), and **honesty**--to be truthful; telling the truth."
- A. Only Part (i) is correct.
 - B. Only Part (ii) is correct.
 - C. Both Part (i) and Part (ii) are correct.
 - D. Neither Part (i) nor Part (ii) is correct.
7. On repeating WORLD backwards, a subject says: "R-D-O-W ... No! ... D-L-R-O-W." The score should be
- A. 2
 - B. 3
 - C. 4
 - D. 5

8. On repeating WORLD backwards, a subject says LDOROL. The score should be
- A. 2
 - B. 3
 - C. 4
 - D. 5
9. On the recall of three words: You have presented "shoes, black, modesty" and a subject recalls "black, shoe, modestly." His responses are considered correct
- A. For all three words.
 - B. For two of the three words.
 - C. For one of the three words.
 - D. For none of the three words.
10. You have used Brown among the three words presented for repeating and later recall. A subject has repeated Brown correctly but later recalls Black. The score for the recall of the color word should be
- A. 3, because the difference between Blue and Black is minor.
 - B. 2, because Black belongs to the same category as Blue (both black and blue are colors.)
 - C. 1 or 0, depending on the subject's response after being given the three choices of "Blue, Black, or Brown?"
 - D. 1.
11. The date is January 31. A subject says it is February 2. The scores should be:
- A. 1 for month; 1 for date.
 - B. 1 for month; 2 for date.
 - C. 2 for month; 1 for date.
 - D. 2 for month; 2 for date.

12. The date is December 24. Winter officially started on December 21. A subject says that this is the "Christmas season."
- A. You score 1 and move on.
 - B. You score 0 and move on.
 - C. You provide the names of the four seasons for the subject to choose from; score 1 if the answer is either Fall/Autumn or Winter.
 - D. You name the four seasons for the subject to choose from and score 0 if the answer is Fall/Autumn.
13. One sub-item on Spatial Orientation asks the subjects whether they are at a store, a hospital, or a home. If the correct answer is none of the three choices,
- A. You substitute it for the first choice.
 - B. You substitute it for the second choice.
 - C. You add it after the second choice.
 - D. You substitute it for the third choice.
14. When asked to name 4-legged animals and the subject says "Cat, dog, horse, kittens, tigers, horses, lions, monkeys", the score should be
- A. 5
 - B. 6
 - C. 7
 - D. 8

15. A subject says that an arm and a leg both bend.
- A. You score 2 and move on.
 - B. You score 1, teach for a 2-point answer, then move on.
 - C. You score 1 and move on.
 - D. None of the above is correct.
16. A subject says that "Sometimes you cry when you laugh, and sometimes you laugh when you cry."
- A. You score 0 and do not coach.
 - B. You score 0 and coach for a 2-point answer.
 - C. You score 1 but do not coach.
 - D. You score 1 and coach for a 2-point answer.
17. When asking a subject to repeat "No ifs, ands, or buts," he interrupts with "Can you say it again?" before you have finished. You
- A. Ignore the interruption and continue to finish the statement.
 - B. Stop and say: "Sorry I cannot repeat it." You then continue to finish the statement.
 - C. Re-present the statement from the beginning.
 - D. Do none of the above.
18. When asked to follow the written command CLOSE YOUR EYES, a subject reads the command only. You should
- A. Just score 1 and move on.
 - B. Request "Please do what it says" and score 3 if the subject closes the eyes.
 - C. Request "Please do what it says" and score 2 if the subject closes the eyes.
 - D. Request "Please do what it says." and score 1 if the subject closes the eyes.

19. If the subject's writing to the dictated sentence is "He wood Like to go homE." The score should be
- A.5
 - B.4
 - C.3
 - D. 2.
20. When asked to copy the pentagons, a subject is not satisfied with her first product and makes a second attempt. Her first product is worth 6 points. Her second product at the end of the one-minute time interval is worth 4 points. Her score for this item should be:
- A.6
 - B.4
 - C.5
 - D. 10
21. You say to a left-handed subject "Take this piece of paper with your right hand--" and the subject interrupts with "Which hand?", you
- A. Ignore the interruption and continue to finish with "fold it in half, and hand it back to me". Then you say "Sorry I cannot repeat. Please, just do what you think I asked you to do."
 - B. Stop and answer the question first, then continue with the remaining commands.
 - C. Stop and say "Sorry I cannot repeat" and then continue with the remaining commands.
 - D. Do none of the above.

22. On the three-commands item, a right-handed subject takes the piece of paper with her left hand, folds it in half with both hands, and puts it down on the table. Her score should be
- A.3
 - B.2
 - C.1
 - D.0
23. You ask for a second recall of three words
- A. Only when the subject scored 9 during the first recall.
 - B. Only when the subject scored > 6 during the first recall.
 - C. Only when the subject scored > 3 during the first recall.
 - D. Even when the subject scored 0 during the first recall.

ANSWER SHEET FOR THE QUIZ ON THE **3MS TEST**

Name: _ Last , _ First

Institution: _ Tel.: () _
area code Ext: _

Date: MM / _ DD / 20_YY

Quiz Form: _ A or B Start time: HH : _ MM

FOR EACH ITEM, READ ALL FOUR ALTERNATIVES FIRST, THEN SELECT THE BEST ONE. WRITE IN YOUR CHOICE (A, B, C, OR D) ABOVE THE ITEM NUMBER.

ITEM 1 2 3 4 5 6

ITEM 7 8 9 10 11 12

ITEM 13 14 15 16 17 18

ITEM 19 20 21 22

**PLEASE RETURN QUIZ BOOKLET
WITH THIS ANSWER SHEET.**

End time: HH : _ MM

ANSWER SHEET FOR THE QUIZ ON THE **3MS TEST**

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Answer Keys

Quiz Form A.

1 D 2C 3 C 4A 5 B
6A 7D 8 C 9A 10 D 11 B
12 B 13 A 14 C 15 C 16 D
17 B 18D 19 B 20 A 21 C 22 D

Quiz Form B.

1 C 2D 3 C 4D 5 B 6 C
7 D 8 A 9 A 10 C 11 D 12 C
13 B 14 B 15 B 16 A 17 A
18 C 19 D 20 A 21 A 22 B 23 D

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