T-Cog Neuropsychological Battery

Tests reported on Form C2T, Uniform Data Set (UDS) v4.0

UDSv4.0, January 2025

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Revisions made to this Neuropsychological Battery since release (January 2025)

Date yyyy-mm-dd	Description	Test(s) affected
2025-02-03	Moved RAVLT test delay recording from after List B to after Trial 6.	Rey Auditory Verbal Learning Test (RAVLT)
2025-10-09	Changed "church" to "school" in CERAD J7 Word List Recognition to avoid interference with the MoCA	CERAD Verbal Learning - Delayed Recognition
2025-12-10	Clarified instructions that C2T is only meant to be done via Telephone. Please use C2 for video or in-person visits	N/A

Recommendations for UDS v4.0 telephone-administered testing

- Examiners who use a telephone headset with built-in earphones and a microphone can remain hands-free for typing or writing. Voice clarity is better, too.
- Arrange a mutually agreeable time to conduct the testing with the participant. Make sure to let them know to reserve 1 hour for the call.
- When the examiner calls the participant, please re-introduce yourself and remind them where you are calling from and the purpose of the call. Confirm their identity with name and date of birth.
- Make it clear to the participant at the very beginning of the call what you will do if the call is interrupted. Typically, that is an immediate call-back by the examiner.
- Work with the participant to determine the best way to use their phone during testing. Options might include holding it, using the speaker phone or using earphones/ear buds with a built-in microphone. If the participant is hands-free, the risk of inadvertent disconnection by accidentally pressing cell phone buttons is less.
- Instruct the participant to position themselves close to the microphone at all times. If you cannot hear them clearly, instruct the participant to speak directly into the microphone. You may need to remind them throughout the call.
- For examiners who wish to record their session, using speaker phone is recommended so that both participant's and examiner's voices can be recorded.

Examiner's physical environment

- Examiner's environment should be quiet and free of distracting voices or sounds. This can be challenging. Posting signs on office doors that testing is under way and discussing noise-reduction strategies with officemates may be necessary.
- The examiner's space should be acoustically favorable. Large open rooms do not convey sound as well as closed-in areas.
- Having materials ready before testing reduces extraneous noise and saves time.
- Participants with known or suspected advanced cognitive impairment (i.e., dementia) may benefit from having a proxy or care partner assist them with setting up the telephone call. After the participant and tester have successfully initiated the call, the care partner would be asked to leave the room.

Participant's hearing

Assess participant's hearing with questions and then a hearing task. Below is a script:

"Before we begin, I have a few questions about your hearing to make sure you can hear me well enough over the telephone."

"Do you usually have trouble hearing over the phone?" ☐ **No** ☐ **Yes**

"Can you hear me well enough?" ☐ **No** ☐ **Yes**

"Do you use a hearing device?" ☐ **No** ☐ **Yes**

If YES … "**Is it in place?"** ☐ **No** ☐ **Yes**

If NO … "**Would you please put it on?"** ☐ **No** ☐ **Yes**

"Would you please repeat the following statement: 'I have a cat, so all I need is a dog.'"

Did participant correctly repeat statement? ☐ **No** ☐ **Yes**

If NO, then repeat the sentence: **"I have a cat, so all I need is a dog."**

Did participant correctly repeat sentence? ☐ **No** ☐ **Yes**

If YES, proceed with testing.

If NO, but you think from your interaction up to this point their poor hearing can be compensated for, proceed with the testing; however, speak as loudly and distinctly as possible.

If NO, and you think hearing will severely bias the cognitive test results, DO NOT continue with testing. Inform the participant that you will not be performing the testing:

Thank you very much, Ms. / Mr. _____, but you may not be able to hear me well enough to complete the memory tasks over the telephone, so I will not continue at this time. On behalf of the _____ study team, thank you for taking time to speak with me today.

Participant's physical environment

- Testing should be done with the participant alone in a room, although a proxy may initially be present in order to assist the participant with any technical difficulties encountered.
- If someone else is there you should ask that that person or the participant leave the space.
- If other people enter the participant's space, you may have to temporarily interrupt testing to ensure that they give the tasks their full attention.
- Ask the participant to ensure they are comfortable and if the testing environment is as free of distractions as possible. Here is an example of text:

"Are you in a quiet place where you will not be disturbed for about _____ minutes?" ☐ **No** ☐ **Yes**

Core tests: 30 minutes
Core + Word List Recall tests: 45 minutes
Core + all optional tests: 1 hour

"Do you have pets that need to be taken care of before we begin?" ☐ **No** ☐ **Yes**

If YES, allow the participant to take care of their pet(s) before beginning

"Other than the phone you are using, do you have a cell phone, TV, radio, or computer turned on in front of you?" ☐ **No** ☐ **Yes**

If YES … **"Can you to turn them off so they won't distract you while we're working together?"**

"Do you have anyone nearby?" ☐ **No** ☐ **Yes**

If YES … **"Can you please ask them to move to another room, as we don't want you distracted during the interview."**

"Do you need to use the bathroom or get a drink of water?" ☐ **No** ☐ **Yes**

If YES, allow the participant time to use the restroom or get a drink of water

Instruct the participant about use of aids during testing. Here is an example:

"These tasks should only be done in your head. Do you have any pencils, pens, or paper in front of you now?" ☐ **No** ☐ **Yes**

If YES … **"I need you to remove them since we'll only be using the phone to talk for these tasks."**

"Do you have any calendars or newspapers in sight or a watch with a date feature?" ☐ **No** ☐ **Yes**

If YES … **"I need you to put them out of sight for me."**

Ask about permission to record:

As part of this research study, your voice will be recorded using a digital recorder while performing some of the cognitive tests. This is to assure accuracy as we record your answers. You will not be able to inspect, review, or approve the content of the digital recordings. You may request the recording be stopped at any time, and you can withdraw your consent to use the digital recording before any information is transcribed. All recordings may be kept and stored indefinitely and may be analyzed for research purposes. May I record the interview?"	☐ **No** ☐ **Yes**
"Good, _____, I think we are ready to get started. Are you ready?"	☐ **No** ☐ **Yes**

Examiner voice clarity

Speak a bit slower than you would face-to-face. The pace newscasters use is good. You need to give yourself time to say each word clearly and completely. As such, some test instructions have been modified slightly (see RAVLT instructions).

Enunciate each word. Some sounds are not heard as clearly over the phone or are difficult to distinguish from different sounds. You may need to exaggerate a bit certain letters or syllables. Over time you may develop a list of very commonly misheard words and decide to give credit for them. Of course, the first action should be to speak more clearly and crisply.

If you speak with an accent, you may need to adjust your speech for some words. You can practice with a person who does not speak your native tongue until you are ready. Whenever possible, use native speakers for the language of administration.

Montreal Cognitive Assessment (MoCA)—Blind

MEMORY		FACE	VELVET	CHURCH	DAISY	RED	POINTS
Read list of words, subject must repeat them. Do 2 trials, even if 1st trial is successful. Do a recall after 5 minutes.	1st TRIAL						NO POINTS
	2nd TRIAL						

ATTENTION		
Read list of digits (1 digit / sec.).	Subject has to repeat in the forward order. [ ] 2 1 8 5 4 Subject has to repeat in the backward order. [ ] 7 4 2	___ /2
Read list of letters. The subject must tap at each letter A. No points if ≥ 2 errors **[ ] F B A C M N A A J K L B A F A K D E A A A J A M O F A A B**		____ /1
Seria 7 subtraction starting at 100 [ ] 93 [ ] 86 [ ] 79 [ ] 72 [ ] 65 4 or 5 correct subtractions: **3 pts,** 2 or 3 correct: **2 pts,** 1 correct: **1 pt,** 0 correct: **0 pt**		____ /3
LANGUAGE	**I only know that John is the one to help today. [ ]**	____ /2
Repeat:	**The cat always hid under the couch when dogs were in the room [ ]**	
Fluency: Name maximum number of words in one minute that begin with the letter F. [ ] _____ (N ≥ 11words)		____ /1
ABSTRACTION Similarity between e.g. orange - banana = fruit	**[ ] train - bicycle** **[ ] watch - ruler**	____ /2

DELAYED RECALL		Has to recall words WITH NO CUE	FACE	VELVET	CHURCH	DAISY	RED	
Memory	(MIS) X3		[ ]	[ ]	[ ]	[ ]	[ ]	____ /5
Index	X2	Category cue						NO POINTS
Score	X1	Multiple choice cue						

ORIENTATION	[ ] Date [ ] Month [ ] Year [ ] Day [ ] Place [ ] City	____ /6

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Created by Z. Nasreddine MD

www.mocacognition.com

Add 1 point if ≤ 12 yr edu

TOTAL ____ /22

MIS: /15 (Normal ≥ 19/22)

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MoCA Blind Notes Page

Craft Story 21 Recall (Immediate)

INSTRUCTIONS: Making sure you have the participant's attention, read the following instructions aloud. Then read the story slowly, articulating clearly and with normal inflection.

SAY: "**I am going to read you a story. Listen carefully, and when I am through, I want you to tell me everything you can remember. Try to use the same words I use but you may also use your own words. The story is..."**

Maria's / child / Ricky / played / soccer / every / Monday /

at 3:30. / He / liked / going / to the field / behind / their / house /

and joining / the game. / One / day, / he / kicked / the ball / so / hard /

that it / went / over / the neighbor's / fence / where three / large /

dogs / lived. / The dogs' / owner / heard / loud / barking, / came /

out, / and helped / them / retrieve / the ball.

Record time administration ended: ☐

Total story units recalled (VERBATIM SCORING): ___ ___ / 44

Total story units recalled (PARAPHRASE SCORING): ___ ___ / 25

As soon as the story is over, give the recall instruction:

SAY: "**Now tell me the story I just told you. Try to remember as much as you can**."

Record the participant's recall, writing between the lines of the story above. For rapid and accurate transcribing of the story, use abbreviations as needed, omit filler words and irrelevant verbiage, and if absolutely necessary, say "A little slower, please," rather than miss story elements. Make sure your transcription of the story is legible before proceeding.

After transcribing the story, you must give the delayed recall cue.

SAY: "**Later on, I will ask you to tell me this story again, so try not to forget it**." Note the time so that later you can calculate the time that has elapsed between Craft Story 21 Recall (Immediate) test and the Craft Story 21 Recall (delayed) test.

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Craft Story 21 Recall (Immediate): Verbatim Scoring

PERFECT VERBATIM RESPONSE (**1.0 POINT**): Give the participant 1 point for every bit for which content words are recalled exactly and completely. Allowances can be made for variations of verbs (e.g., "likes" for "liked," "join" for "joining") and minor omissions (e.g., "neighbor" for "neighbor's") or changes in number (e.g., "games" for "game"). The content words do not need to be recalled by the participant in the same order they were read to receive credit. The words can appear anywhere in the recall.

Maria's	
child	
Ricky	
played	
soccer	
every	
Monday	
three thirty	
he	
liked	
going	
field	
behind	
their	
house	
joining	
game	
one	
day	
he	
kicked	
ball	

so	
hard	
it	
went	
over	
neighbor's	
fence	
three	
large	
dogs	
lived	
dogs'	
owner	
heard	
loud	
barking	
came	
out	
helped	
them	
retrieve	
ball	
Total	

Scoring

Number of items recalled for verbatim scoring (IMMEDIATE RECALL SCORE): ___ ___ / 44

Guidelines for Paraphrase Scoring, Craft Story 21

Item	General Rule	Alternative 1-point responses	0-point responses	Points
Maria's	"Maria" or a variant of the name	Mary, Marie	Martha, Anna	
child	"child" or a phrase denoting it was a young person	son, kid, boy, teenager, young man	guy, children, daughter	
Ricky	"Ricky" or a variant of the name	Rick, Rich, Richie, Richard, Ricardo	Randy, Rusty, Robert	
played	"played" is required	to play, plays	did (soccer)	
soccer	"soccer" is required	futbol	baseball, volleyball, other sport	
every Monday	"Monday" or an indication that it occurred on a weekday	—	every day, another day of the week	
at 3:30	an indication that the activity took place in the afternoon	after school, every afternoon	after dinner, at night, in the morning	
He liked going to the field	an indication that he went to an outdoor area	went outside, went to the yard, going to the backyard	went to the school, gym	
behind their house	"house" or word denoting a house	home, residence, where they lived	any other building	
and joining	an indication that he participated in a game	played w/ other kids, became part of the team, playing w/the team	watching, played in the park	
the game.	"game" in any context	—	—	
One day	"One day" is required	—	—	
he kicked	indication that he performed the activity with his foot	booted, punted	threw, hit (with no mention of the foot)	
the ball	"Ball" is required	football, soccer ball	baseball, volleyball	
so hard	an indication that force was used	so much force, so strongly, (kicked it) so far	—	
that it went over	"Over" is required	—	—	
the neighbor's	an indication that the person lived in the same area	nearby resident	friend's	
fence	"fence" or a word denoting a fence of some kind	garden wall, wall	property line, street	
where three	"Three" is required	three (boys)	—	
large dogs lived.	an indication that there were dogs present	hounds, doggies	puppies, cats, kittens, other animals	
The dogs' owner	an indication that the person was responsible for the dogs	neighbor (if owner implied and "neighbor" mentioned twice)	a bystander, the police	
heard loud barking	an indication that the dogs were making noise	yelping, baying, yapping, heard the dogs	saw the dogs running around	
came out	a word or phrase indicating that the owner was present	(owner) saw the ball	his mother came out, the dogs came out	
and helped them	a word or phrase indicating that help was provided	assisted, aided, had to help	—	
retrieve the ball.	an indication that they got the ball back	gave him the ball, return the ball, (helped him) get the ball	—	

Number of items recalled for paraphrase scoring (IMMEDIATE RECALL SCORE): ___ ___ / 25 maximum

Number Span Test: Forward

SAY: **"I am going to ask you to repeat some numbers for me. Wait until I finish saying the numbers and then repeat them in the same order. For example, if I say 1–8–7, you would say 1–8–7. If I say 2–9–8, what would you say?"** If the participant gives the wrong answer, say, **"Actually, you would 2–9–8."**

SAY: **"Repeat only the numbers I say each time."** Then start with the test items. Before each item, say, **"Ready?"**

Stop testing after two consecutive failures of the same span length.

Span length		Response	Response code *incorrect = 0 correct = 1*
3	1 - 8 - 4		_____
	2 - 7 - 9		_____
4	4 - 1 - 6 - 2		_____
	8 - 1 - 9 - 5		_____
5	6 - 4 - 9 - 2 - 8		_____
	7 - 3 - 8 - 6 - 1		_____
6	3 - 9 - 2 - 4 - 7 - 5		_____
	6 - 2 - 8 - 3 - 1 - 9		_____
7	9 - 6 - 4 - 7 - 1 - 5 - 3		_____
	7 - 4 - 9 - 2 - 6 - 8 - 1		_____
8	4 - 7 - 2 - 5 - 8 - 1 - 3 - 9		_____
	2 - 9 - 5 - 7 - 3 - 6 - 1 - 8		_____
9	6 - 8 - 4 - 1 - 9 - 3 - 5 - 2 - 7		_____
	1 - 3 - 9 - 2 - 7 - 5 - 8 - 6 - 4		_____
		Total correct:	_____
		Length of longest correct series:	_____

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Number Span Test: Backward

SAY: **"I am going to ask you to repeat some numbers for me but to reverse them from the way I say them. Wait until I finish saying the numbers and then repeat them in reverse order, or backward. For example, if I say 3–7–4, you would say 4–7–3. If I say 7–3–6, what would you say?"** If the participant gives the wrong answer, say, **"Actually, you would 6–3–7."**

SAY: **"Repeat only the numbers I say each time, backward, in reverse order."** Then start with the test items. Before each item, say, **"Ready?"**

Stop testing after two consecutive failures of the same span length.

Span length		Response	Response code *incorrect = 0 correct = 1*
2	2 - 5		_____
	4 - 7		_____
3	2 - 9 - 6		_____
	3 - 7 - 4		_____
4	7 - 1 - 8 - 6		_____
	5 - 1 - 6 - 3		_____
5	5 - 2 - 4 - 9 - 1		_____
	9 - 1 - 7 - 3 - 6		_____
6	6 - 8 - 5 - 7 - 9 - 2		_____
	8 - 1 - 6 - 3 - 5 - 9		_____
7	1 - 5 - 2 - 9 - 7 - 3 - 8		_____
	7 - 3 - 1 - 6 - 8 - 5 - 2		_____
8	3 - 6 - 4 - 9 - 5 - 2 - 7 - 1		_____
	6 - 3 - 5 - 7 - 1 - 8 - 2 - 9		_____
		Total correct:	_____
		Length of longest correct series:	_____

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Verbal Learning Tests

Please select either

☐ the Rey AVLT (beginning on page 14)

OR

☐ the CERAD Word Memory test (beginning on page 16)

Rey Auditory Verbal Learning Test – Immediate

INSTRUCTIONS:	
List A, Trial 1	**"I am going to read a list of words. Listen carefully, for when I stop, you are to say back as many as you can remember. It doesn't matter in what order you repeat them. Just try to remember as many as you can."** *Read List A, at a rate of 1 word every second, then record responses. Note the order of recall for correct responses (i.e., 1, 2, 3, ...); do not record repetitions or intrusions in the order of recall. Use another mark to note repetitions (e.g., "R" or a symbol", and track intrusions in the box at the foot of the table.*
List A, Trials 2-5	**"I am going to read the same list again, and once again when I stop, I want you to tell me as many of the words as you can remember, including words you have said before. It doesn't matter in what order you say them, just say as many words as you can remember, whether or not you said them before."** *Repeat,* **"Now I am going to read the same list again..."** *for Trials 2 through 5 with List A.*
List B	**"Now I am going to read a second list of words. This time, again you are to say back as many words of this second list as you can remember. Again, the order in which you say the words does not matter. Just try to remember as many as you can."** *Read List B at the rate of 1 word every second, record responses. Note the order of recall for correct responses; do not record order of recall for repetitions or intrusions.*
Trial 6	**"Now tell me all the words you remember from the first list."** *Record responses. Note the order of recall for correct responses; do not record order of recall for repetitions or intrusions.*

List A	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	List B	List B Recall	Trial 6 (List A)	Do Not Repeat
DRUM						DESK			DRUM
CURTAIN						RANGER			CURTAIN
BELL						BIRD			BELL
COFFEE						SHOE			COFFEE
SCHOOL						STOVE			SCHOOL
PARENT						MOUNTAIN			PARENT
MOON						GLASSES			MOON
GARDEN						TOWEL			GARDEN
HAT						CLOUD			HAT
FARMER						BOAT			FARMER
NOSE						LAMB			NOSE
TURKEY						NAIL			TURKEY
COLOR						PENCIL			COLOR
HOUSE						CHURCH			HOUSE
RIVER						FISH			RIVER
TOTAL RECALL						TOTAL RECALL			
INTRUSIONS						INTRUSIONS			

Record the time after recall of Trial 6 (delay begins): ___ ___ : ___ ___ ☐ AM ☐ PM

Administer Delayed Recall 20–30 minutes later.
Do not cue for the delayed recall.

CERAD Neuropsychological Assessment Battery — Word List Tasks

INSTRUCTIONS:

J4 Word List Memory Task

To assess participants' ability to remember newly learned information, we administer this free recall task, using 10 common nouns. To ensure that participants are familiar with and attend to each word, they are asked to listen to the words read by the test administrator. The ten words on the word list are read at a constant rate of 1 word every second, and then the participant is immediately asked to recall as many as possible. There are three trials, each of which presents the words in a different order.

The instructions for the first trial are:

SAY: "I am going to read you 10 words. Later I will ask you to recall all 10 words."

Read the words in the first set at the rate of one word every second. After the last word has been read, ask the participant to recall as many words as they can. Note the order of recall for correct responses (i.e., 1, 2, 3,...); do not record repetitions or intrusions in the order of recall. Allow a maximum of 90 seconds.

Continue with the second and third sets of words in the same way, changing your instructions slightly to encourage the participant. The participant's score for each trial is the number of words correctly recalled. Be sure also to record on each trial the number of words that the participant "recalls" that are not on the list (intrusions).

(Exposure time: 1 word every second; Recall time: 90 seconds per trial maximum)

CHECK EACH WORD AS IT IS RECALLED					
Trial 1		**Trial 2**		**Trial 3**	
Butter	___	Ticket	___	Queen	___
Arm	___	Cabin	___	Grass	___
Shore	___	Butter	___	Arm	___
Letter	___	Shore	___	Cabin	___
Queen	___	Engine	___	Pole	___
Cabin	___	Arm	___	Shore	___
Pole	___	Queen	___	Butter	___
Ticket	___	Letter	___	Engine	___
Grass	___	Pole	___	Ticket	___
Engine	___	Grass	___	Letter	___
Intrusions:		**Intrusions:**		**Intrusions:**	
_____		_____		_____	
_____		_____		_____	
_____		_____		_____	
_____		_____		_____	

Trial 1 Total: ___ ___
Trial 1 Intrusions: ___ ___

Trial 2 Total: ___ ___
Trial 2 Intrusions: ___ ___

Trial 3 Total: ___ ___
Trial 3 Intrusions: ___ ___

Record the time after recall of J4 Word List (delay begins): ___ ___ : ___ ___ ☐ AM ☐ PM

Category Fluency

INSTRUCTIONS:

SAY: **"I am going to give you a category and I want you to name, as fast as you can, all of the things that belong in that category. For example, if I say 'articles of clothing,' you could say 'shirt,' 'tie,' or 'hat.' Can you think of other articles of clothing?"**

Allow up to 20 seconds for the participant to produce two responses. Circle the number corresponding to the participant's responses, and read the associated instruction.

Response code	Instruction
0 (No response)	"You could have said 'shoes' or 'coat' since they are articles of clothing."
1 (One or more incorrect responses, no correct response)	"No, _____is (are) not an article(s) of clothing. You could have said 'shoes' or 'coat' since they are articles of clothing."
2 (One or more correct response, no incorrect responses)	"That's right. You also could have said 'shoes' or 'coat'."
3 (One or more correct responses, one or more incorrect responses)	"_____is (are) correct, but _____ is (are) not an article of clothing. You also could have said 'shoes' or 'coat'."
4 (Two or more correct responses)	"That's right."

Next, read the instructions for the Animals category (worksheet follows this instruction page):

SAY: **"Now I want you to name things that belong to another category: Animals. You will have one minute. I want you to tell me all the animals you can think of in one minute. Ready? Begin."**

Start timer as you say **"Begin."** Write actual responses as legibly as possible on the Worksheet for Category Fluency — Animals. Stop the procedure at 60 seconds. One prompt (**"Tell me all the animals you can think of"**) is permitted if the participant makes no response for 15 seconds or expresses incapacity (e.g., "I can't think of any more"). It is also permissible to repeat the instruction or category if the participant specifically requests it.

Next, read the instructions for the Vegetables category (worksheet follows this instruction page):

SAY: **"Now I want you to name things that belong to another category: Vegetables. You will have one minute. I want you to tell me all the vegetables you can think of in one minute. Ready? Begin."**

Start timer as you say **"Begin."** Write actual responses as legibly as possible on the Worksheet for Category Fluency — Vegetables. Stop the procedure at 60 seconds. One prompt (**"Tell me all the vegetables you can think of"**) is permitted if the participant makes no response for 15 seconds or expresses incapacity (e.g., "I can't think of any more"). It is also permissible to repeat the instruction or category if the participant specifically requests it.

Worksheet for Category Fluency — Animals

1.	27.	53.
2.	28.	54.
3.	29.	55.
4.	30.	56.
5.	31.	57.
6.	32.	58.
7.	33.	59.
8.	34.	60.
9.	35.	61.
10.	36.	62.
11.	37.	63.
12.	38.	64.
13.	39.	65.
14.	40.	66.
15.	41.	67.
16.	42.	68.
17.	43.	69.
18.	44.	70.
19.	45.	71.
20.	46.	72.
21.	47.	73.
22.	48.	74.
23.	49.	75.
24.	50.	76.
25.	51.	77.
26.	52.	

Worksheet for Category Fluency — Vegetables

1. _____	27. _____	53. _____
2. _____	28. _____	54. _____
3. _____	29. _____	55. _____
4. _____	30. _____	56. _____
5. _____	31. _____	57. _____
6. _____	32. _____	58. _____
7. _____	33. _____	59. _____
8. _____	34. _____	60. _____
9. _____	35. _____	61. _____
10. _____	36. _____	62. _____
11. _____	37. _____	63. _____
12. _____	38. _____	64. _____
13. _____	39. _____	65. _____
14. _____	40. _____	66. _____
15. _____	41. _____	67. _____
16. _____	42. _____	68. _____
17. _____	43. _____	69. _____
18. _____	44. _____	70. _____
19. _____	45. _____	71. _____
20. _____	46. _____	72. _____
21. _____	47. _____	73. _____
22. _____	48. _____	74. _____
23. _____	49. _____	75. _____
24. _____	50. _____	76. _____
25. _____	51. _____	77. _____
26. _____	52. _____	

CERAD Neuropsychological Assessment Battery — Word List Recall

INSTRUCTIONS:

J6 Word List Recall

This task is to determine how well participants can remember the words presented in form J4 **after 5 minutes. Fill the delay with additional tests or tasks that do not involve verbal encoding.** The instructions for this recall task are:

SAY: "A few minutes ago I asked you to learn a list of ten words. Now I want you to try to recall as many of those 10 words as you can. OK, now tell me as many of those ten words as you can remember."

Allow the participant a maximum of 90 seconds. Number each word in its corresponding block on the response sheet in the order it is recalled. Score the number of words correctly recalled. Also record and score the number of words not on the list (intrusions) that the participant reports.

(Maximum time: 90 seconds)

Record the time when delayed recall was initiated (delay ends): ___ ___ : ___ ___ ☐ AM ☐ PM

CHECK EACH WORD AS IT IS RECALLED	
Butter	☐
Arm	☐
Shore	☐
Letter	☐
Queen	☐
Cabin	☐
Pole	☐
Ticket	☐
Grass	☐
Engine	☐

Intrusions:
_____
_____
_____
_____
_____
_____
_____

Total recalled: ___ ___

Intrusions: ___ ___

CERAD Neuropsychological Assessment Battery — Word List Recognition

INSTRUCTIONS:

J7 Word List Recognition

The instructions for this recognition test are:

SAY: "Now I am going to read you a set of words. Some of the words are from the list you heard earlier and some are words I haven't read to you before. I want you to say YES if the word I read to you is from the list you heard earlier (read the first word). Is this one of the words you heard earlier?"

Repeat the question or say, **"How about this one?"** for each word. Record the participant's response. The scores for this test include the number correctly recognized words previously heard (correct **"Yes"** responses) and the number of correctly rejected new words (correct **"No"** responses).

Urge participants to give "yes" or "no" responses, since "don't knows" are unscorable.

(Only YES or NO responses are acceptable.)

	CORRECT YES RESPONSE	CORRECT NO RESPONSE
School		1
Coffee		1
Butter*	1	
Dollar		1
Arm*	1	
Shore*	1	
Five		1
Letter*	1	
Hotel		1
Mountain		1
Queen*	1	
Cabin*	1	
Slipper		1
Pole*	1	
Village		1
String		1
Ticket*	1	
Troops		1
Grass*	1	
Engine*	1	

Total YES correct: ___ ___

Total NO correct: ___ ___

*Original word from Word List Memory Task

Oral Trail Making Test *(Optional)*

Part A

Examiner: **"OK, here is something a little different. I'd like you to count from 1 to 25 as quickly as you can. 1, 2, 3, 4, and so on. Ready? Begin."**

Start timing as soon as you say "Begin." If a mistake is made, stop the participant and have them continue with the series from the last correct number by saying: **"You last said '[specific number],' please continue from there."** Do not stop timing during corrections.

If the participant stops for 5 seconds or more before completing, you may prompt with "Please keep going." If the participant does not recall where they are, provide the last correct response by saying: **"You last said '[specific number],' please continue from there,"** and score as an error. After a further delay of 15 seconds or more, discontinue. Enter the appropriate reason code 995-998 from the key and leave total number of errors and correct responses blank. Allow a maximum of 100 seconds for the test. If the participant is not finished by 100 seconds, the score is 100.

Record the time in seconds to complete the series, including the time to offer corrections. Be sure to write down where errors occurred on the score sheet. You will record the total number of errors as well.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

Time to completion: _____ (seconds)

Total number of errors: _____

Total number correct: _____

PART B PRE-TEST

To ensure that the participant is familiar with the alphabet,

SAY: **"Please tell me the alphabet starting with the letter A."**

A B C D E F G H I J K L

- If the participant makes no errors in saying the alphabet from the letter "A" to "L," continue with the test.
- If the participant makes 3 or more errors in saying the alphabet from "A" to "L," discontinue the test and code as 997.
- If the participant makes 1 or 2 errors in saying the alphabet from "A" to "L," ask them to say the alphabet again. If they make at least one error, discontinue the test and code as 997.

PART B

Examiner: **"Now I'd like you to switch between numbers and letters when you count. So you would say the number 1, and then say the letter A, then number 2, then letter B and so on, as quickly as you can. Let's do a practice trial first. Count to the number 4, switching between numbers and letters. Ready? Begin."**

If participant makes a mistake, say, **"No, that was incorrect, it should be 1, A, 2, B, 3, C, 4."** Allow participant to practice up to three attempts. Repeat instructions with guidance twice. If participant still does not understand, discontinue Part B and go on to the next task. Enter the appropriate reason code 995-998 from the key, and leave total number of errors and correct responses blank.

If participant is able to complete the practice say: **"Now I want you to switch between numbers and letters when you count 1, A, 2, B, 3, C, and so on until you reach the number 13. Ready, begin."**

Start timing as soon as you say "Begin." If a mistake is made, stop the participant and have them continue with the series from the last correct pair by saying: **"You said '[specific number] [specific letter];' Continue from there."** Do not stop timing during corrections. If the participant stops for 5 seconds or more before completing, you may prompt with "Please keep going." If the participant does not recall where they are, provide last correct pair by saying: **"You said '[specific number] [specific letter];' continue from there,"** and score as an error. You can remind the participant **"Number-letter"** to keep them on task. After a further delay of 15 seconds or more, discontinue and enter the appropriate reason code 995-998 from the key and leave total number of errors and correct responses blank.

Allow a maximum of 300 seconds for the test. If the participant is not finished by 300 seconds, the score is 300. Record the time in seconds to complete the series, including the time to offer corrections. Be sure to write down where errors occur on the score sheet. You will record the total number of errors as well.

Practice 1

1	A	2	B	3	C	4

Practice 2

1	A	2	B	3	C	4

Practice 3

1	A	2	B	3	C	4

Attempt

1	A	2	B	3	C	4	D	5	E	6	F	7	G	8	H	9	I	10	J	11	K	12	L	13

Time to completion: _____ (seconds)

Total number of errors: _____

Total number correct: _____

Craft Story 21 Recall (Delayed)

INSTRUCTIONS: Administer this test approximately 20 minutes after Craft Story 21 Recall (Immediate), making note of the time administration of Craft Story 21 Recall (Delayed) began. Note: If 20 minutes have not elapsed, do not add other tests to fill the interval. You may obtain other data, such as blood pressure, weight, etc. Administer Craft Story 21 Recall (Delayed) and record the actual time elapsed.

SAY: "**I read you a story a few minutes ago. Can you tell me what you remember about that story now?"**

If the participant does not recall the story or having been told a story, make a note as indicated below and SAY: **"It was a story about a boy. Can you tell it to me now?"**

Maria's / child / Ricky / played / soccer / every / Monday /

at 3:30. / He / liked / going / to the field / behind / their / house /

and joining / the game. / One / day, / he / kicked / the ball / so / hard /

that it / went / over / the neighbor's / fence / where three / large /

dogs / lived. / The dogs' / owner / heard / loud / barking, / came /

out, / and helped / them / retrieve / the ball.

Record time administration began: ☐

Total story units recalled (VERBATIM SCORING): ___ ___ / 44

Total story units recalled (PARAPHRASE SCORING): ___ ___ / 25

Time elapsed since Craft Story 21 Recall (IMMEDIATE): ___ ___ minutes

Cue ("boy") needed: ☐ No ☐ Yes

Craft Story 21 Recall (Delayed): Verbatim Scoring

PERFECT VERBATIM RESPONSE (**1.0 POINT**): Give the participant 1 point for every bit for which content words are recalled exactly and completely. Allowances can be made for variations of verbs (e.g., "likes" for "liked," "join" for "joining") and minor omissions (e.g., "neighbor" for "neighbor's") or changes in number (e.g., "games" for "game"). The content words do not need to be recalled by the participant in the same order they were read to receive credit. The words can appear anywhere in the recall.

Maria's	
child	
Ricky	
played	
soccer	
every	
Monday	
three thirty	
he	
liked	
going	
field	
behind	
their	
house	
joining	
game	
one	
day	
he	
kicked	
ball	

so	
hard	
it	
went	
over	
neighbor's	
fence	
three	
large	
dogs	
lived	
dogs'	
owner	
heard	
loud	
barking	
came	
out	
helped	
them	
retrieve	
ball	
Total	

Scoring

Number of items recalled for verbatim scoring (DELAYED RECALL SCORE): ___ ___ / 44

Guidelines for Paraphrase Scoring, Craft Story 21

Item	General Rule	Alternative 1-point responses	0-point responses	Points
Maria's	"Maria" or a variant of the name	Mary, Marie	Martha, Anna	
child	"child" or a phrase denoting it was a young person	son, kid, boy, teenager, young man	guy, children, daughter	
Ricky	"Ricky" or a variant of the name	Rick, Rich, Richie, Richard, Ricardo	Randy, Rusty, Robert	
played	"played" is required	to play, plays	did (soccer)	
soccer	"soccer" is required	futbol	baseball, volleyball, other sport	
every Monday	"Monday" or an indication that it occurred on a weekday	—	every day, another day of the week	
at 3:30	an indication that the activity took place in the afternoon	after school, every afternoon	after dinner, at night, in the morning	
He liked going to the field	an indication that he went to an outdoor area	went outside, went to the yard, going to the backyard	went to the school, gym	
behind their house	"house" or word denoting a house	home, residence, where they lived	any other building	
and joining	an indication that he participated in a game	played w/ other kids, became part of the team, playing w/the team	watching, played in the park	
the game.	"game" in any context	—	—	
One day	"One day" is required	—	—	
he kicked	indication that he performed the activity with his foot	booted, punted	threw, hit (with no mention of the foot)	
the ball	"Ball" is required	football, soccer ball	baseball, volleyball	
so hard	an indication that force was used	so much force, so strongly, (kicked it) so far	—	
that it went over	"Over" is required	—	—	
the neighbor's	an indication that the person lived in the same area	nearby resident	friend's	
fence	"fence" or a word denoting a fence of some kind	garden wall, wall	property line, street	
where three	"Three" is required	three (boys)	—	
large dogs lived.	an indication that there were dogs present	hounds, doggies	puppies, cats, kittens, other animals	
The dogs' owner	an indication that the person was responsible for the dogs	neighbor (if owner implied and "neighbor" mentioned twice)	a bystander, the police	
heard loud barking	an indication that the dogs were making noise	yelping, baying, yapping, heard the dogs	saw the dogs running around	
came out	a word or phrase indicating that the owner was present	(owner) saw the ball	his mother came out, the dogs came out	
and helped them	a word or phrase indicating that help was provided	assisted, aided, had to help	—	
retrieve the ball.	an indication that they got the ball back	gave him the ball, return the ball, (helped him) get the ball	—	

Number of items recalled for paraphrase scoring (DELAYED RECALL SCORE): ___ ___ / 25 maximum

Verbal Fluency: Phonemic Test

MATERIALS

1-Minute Timer

SAY: **"I'm going to say a letter of the alphabet. When I ask you to start, tell me as many words as you can that begin with that letter. You will have 1 minute before I tell you to stop. None of the words can be numbers, names of people, or places.**

"For example, if I gave you the letter B, you could say brown, bottle, or bake, but you wouldn't say Barbara, Boston, or billion. Also, please try not to give me the same word with different endings. So if you said bake, you wouldn't also say baked or bakes. And if you said big, you wouldn't also say bigger or biggest.

"Let's begin. Tell me all the words you can, as quickly as you can, that begin with the letter F. Ready? Begin."

ADMINISTRATION

Start timer after completing instructions. Write actual responses as legibly as possible. Stop the procedure at 60 seconds.

PROMPTS

1. If the participant pauses for 15 seconds:
   - **"Keep going."**
   - **"What other words beginning with F can you think of?"**
2. If the participant gives three consecutive words that do not start with the designated letter (*provide this prompt only once during this condition*):
   - **"We are now using the letter F."**

Record **F** responses:

1.	11.	21.	31.
2.	12.	22.	32.
3.	13.	23.	33.
4.	14.	24.	34.
5.	15.	25.	35.
6.	16.	26.	36.
7.	17.	27.	37.
8.	18.	28.	38.
9.	19.	29.	39.
10.	20.	30.	40.

SCORING Number of correct **F-words** generated in 1 minute (0–40) ____ ____

Number of **F-words** repeated in 1 minute (0–15) ____ ____

Number of **non-F-words** and rule violation errors in 1 minute (0–15) ____ ____

SAY: "**Now I want you to do the same for another letter. The next letter is L. Ready? Begin."**

Start timer after completing instructions. Write actual responses as legibly as possible. Stop the procedure at 60 seconds.

PROMPTS

1. If the participant pauses for 15 seconds:
   - **"Keep going."**
   - **"What other words beginning with L can you think of?"**
2. If the participant gives three consecutive words that do not start with the designated letter (*provide this prompt only once during this condition*):
   - **"We are now using the letter L."**

Record **L** responses:

1.	11.	21.	31.
2.	12.	22.	32.
3.	13.	23.	33.
4.	14.	24.	34.
5.	15.	25.	35.
6.	16.	26.	36.
7.	17.	27.	37.
8.	18.	28.	38.
9.	19.	29.	39.
10.	20.	30.	40.

SCORING

Number of correct **L-words** generated in 1 minute (0–40) ____ ____

Number of **L-words** repeated in 1 minute (0–15) ____ ____

Number of **non-L-words** and rule violation errors in 1 minute (0–15) ____ ____

TOTAL number of correct **F-words and L-words** (0–80) ____ ____

TOTAL number of **F-word and L-word** repetition errors (0–30) ____ ____

TOTAL number of **non-F/L words** and rule violation errors (0–30) ____ ____

Rey Auditory Verbal Learning Test — Delayed Recall and Recognition

INSTRUCTIONS:

Administer this test 20 to 30 minutes after the Rey Auditory Verbal Learning Test – Immediate, making note of the time the delayed recall began. **Fill the delay with additional tests or tasks that do not involve verbal encoding.**

After the 20 to 30 minute delay, say: "**A short while ago, I read a list of words to you several times, and you were trying to learn these words. Tell me the words from this list again."** *Record responses. Note the order of recall for correct responses (i.e. 1, 2, 3,...); do not record repetitions or intrusions in the order of recall. Use another mark to note repetitions (e.g., "R" or a symbol), and track intrusions in the box at the foot of the table.*

Record the time when delayed recall was initiated (delay ends): ___ ___ : ___ ___ ☐ AM ☐ PM

List A *(Do Not Repeat)*	Delayed Recall
DRUM	
CURTAIN	
BELL	
COFFEE	
SCHOOL	
PARENT	
MOON	
GARDEN	
HAT	
FARMER	
NOSE	
TURKEY	
COLOR	
HOUSE	
RIVER	
TOTAL RECALL	
INTRUSIONS	

RAVLT Recognition

SAY: **"I'm going to read to you a list that contains the words from the first list, the one I read several times. If the word was on the first list, say 'yes,' and if it was not on the first list, then say 'no.'"**

TEACHER	☐ Yes	☐ No	COFFEE	☐ Yes	☐ No
RIVER	☐ Yes	☐ No	ROAD	☐ Yes	☐ No
BRIDGE	☐ Yes	☐ No	HAT	☐ Yes	☐ No
FARMER	☐ Yes	☐ No	TURKEY	☐ Yes	☐ No
PEN	☐ Yes	☐ No	MINUTE	☐ Yes	☐ No
FOREHEAD	☐ Yes	☐ No	NOSE	☐ Yes	☐ No
KERCHIEF	☐ Yes	☐ No	SCHOOL	☐ Yes	☐ No
HOUSE	☐ Yes	☐ No	BELL	☐ Yes	☐ No
MOON	☐ Yes	☐ No	FACE	☐ Yes	☐ No
COLOR	☐ Yes	☐ No	GARDEN	☐ Yes	☐ No
BEET	☐ Yes	☐ No	CLASSROOM	☐ Yes	☐ No
CURTAIN	☐ Yes	☐ No	PARENT	☐ Yes	☐ No
FLOOR	☐ Yes	☐ No	CHILDREN	☐ Yes	☐ No
SOLDIER	☐ Yes	☐ No	BROOMSTICK	☐ Yes	☐ No
DRUM	☐ Yes	☐ No	NAIL	☐ Yes	☐ No

TOTAL CORRECT: ☐

TOTAL FALSE POSITIVES: ☐

Cues for Rey AVLT Recognition

INSTRUCTIONS:

The participant may ask you to clarify the word on the recognition list, due to hearing challenges over the phone. If so, you may use the descriptions below to explain each word. Do not use these descriptions on the learning trials, or immediate and delayed recall.

TEACHER	A person who teaches, especially in a school
RIVER	A large natural stream of water flowing to a sea or lake
BRIDGE	A structure over a river or road
FARMER	A person who owns or manages a farm, raising animals or growing crops
PEN	A writing instrument
FOREHEAD	The part of the face above the eyebrows
KERCHIEF	A piece of fabric used to cover the head
HOUSE	The building people live in
MOON	In the sky at night
COLOR	Like the color blue or red
BEET	The plant that grows in the ground
CURTAIN	A piece of material that covers windows
FLOOR	What you walk on in a room
SOLDIER	A person who serves in an army
DRUM	An instrument
COFFEE	A hot drink made in the morning
ROAD	What cars drive on
HAT	What someone wears on their head
TURKEY	The bird
MINUTE	As in, 60 seconds
NOSE	The part of the face between the eyes
SCHOOL	Where children go to learn
BELL	An instrument that rings
FACE	The part of your head where your eyes and nose are
GARDEN	Where to grow vegetables, herbs, and flowers
CLASSROOM	A room in a school
PARENT	A mother or father
CHILDREN	Kids or a child
BROOMSTICK	What is used to sweep the floor
NAIL	A small piece of metal for holding wood together

Verbal Naming Test *(Optional)*

Examiner: **"Now we are going to do something different. I'm going to describe an object or a verb and I want you to tell me the name of what I am describing."**

After each prompt, allow the participant 10 seconds to respond. If an incorrect response is given, say, **"No, it's something else,"** and allow the participant the remainder of the initial 10 seconds to respond. Prompts can be repeated, but keep the stopwatch running and adhere to the 10-second time limit. If no correct response is provided during the initial 10 seconds, provide the phonemic cue, saying **"It starts with the sound…** (underlined part of word)." If after 10 seconds from the phonemic cue they have not provided the correct word, proceed to the next item.

Stop testing after six consecutive failures.

	Say **"WHAT IS THE NAME OF …"** *(can stop saying this after participant gets the nature of the task)*	1 point if correct in 10 seconds	Phonemic cue	1 point if correct in 10 seconds
1	**The part of your shirt that goes around your neck**		**Co**llar	
2	**The thing you hold over your head when it rains**		**Um**brella	
3	**The country where the Great Pyramids are**		**E**gypt	
4	**The animal in the desert with a hump on its back**		**Ca**mel	
5	**What you do when you put your nose up to a flower**		**Sme**ll	
6	**What a ship does if it can no longer float**		**Si**nk	
7	**A structure you drive over to cross a river**		**Br**idge	
8	**A period of ten years**		**De**cade	
9	**A small amount of money left for the waiter at a restaurant**		**Ti**p	
10	**What you use to sweep the floor**		**Br**oom	
11	**A baby cat**		**Ki**tten	
12	**The item of clothing to wrap around your neck in the winter**		**Sca**rf	
13	**A piece of land surrounded by water**		**I**sland	
14	**What you do with a razor**		**Sha**ve	
15	**A large animal in Africa with a trunk**		**El**ephant	
16	**What you use to chop wood**		**A**x	
17	**What you do to water to make it hot and steaming**		**Boi**l	
18	**What you do with your money with charities or the church**		**Do**nate	
19	**What ice does when it gets hot**		**Me**lt	
20	**What you wipe your mouth with when eating**		**Na**pkin	
21	**What you use to measure how many inches something is**		**Ru**ler	
22	**What you put your head on to sleep at night**		**Pi**llow	
23	**A long, severe snowstorm**		**Bli**zzard	
24	**The part of your shirt that covers your arms**		**Slee**ves	

	Say **"WHAT IS THE NAME OF …"** *(can stop saying this after participant gets the nature of the task)*	1 point if correct in 10 seconds	Phonemic cue	1 point if correct in 10 seconds
25	**The tool used to collect leaves on the ground**		**Ra**ke	
26	**A pool of water on the ground**		**Pu**ddle	
27	**The kind of mountain that explodes with lava**		**Vo**lcano	
28	**The animal in Australia that hops around and has a pouch**		**Ka**ngaroo	
29	**The African animal that's like a horse and has black and white stripes**		**Ze**bra	
30	**The person who works at a drugstore to fill prescriptions**		**Pha**rmacist	
31	**A device that measures the temperature**		**Ther**mometer	
32	**A collection of thousands of stars**		**Ga**laxy	
33	**A device used to help you add and subtract numbers**		**Ca**lculator	
34	**A moving set of stairs**		**Es**calator	
35	**What a fish uses to breathe**		**Gi**lls	
36	**What someone sings into to make their voice louder**		**Mi**crophone	
37	**What you do to a pencil or knife when it becomes dull**		**Sha**rpen	
38	**A place people go to gamble money**		**Ca**sino	
39	**A small hill made of sand**		**Du**ne	
40	**What a horse does when it runs really fast**		**Ga**llop	
41	**A toy that has a string and floats in the air when it is windy**		**Ki**te	
42	**A baby cow**		**Ca**lf	
43	**An animal in Africa with a very long neck**		**Gir**affe	
44	**What you wear while cooking that prevents food from getting on your clothes**		**A**pron	
45	**A book that is made up of different maps**		**A**tlas	
46	**A desert plant that has spikes**		**Ca**ctus	
47	**The poison a snake uses to kill its prey**		**Ve**nom	
48	**The document you receive when you graduate from high school**		**Di**ploma	
49	**A kitchen appliance that cleans plates and glasses**		**Di**shwasher	
50	**The river in Egypt that is one of the longest in the world**		**Ni**le	

TOTAL CORRECT — WITHOUT CUE: _____ **WITH CUE:** _____

Yochim, B. P., Beaudreau, S. A., Fairchild, J. K., Yutsis, M. V., Raymond, N., Friedman, L., & Yesavage, J. (2015). Verbal Naming Test for use with older adults: Development and initial validation. Journal of the International Neuropsychological Society, 21, 239-248. doi: 10.1017/S1355617715000120

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