**MoCA -- Administration and Scoring Instructions**

**Alternating Trail Making**

* Administration – Give the following instructions:

**“Please draw a line, going from a number to a letter in ascending order.**

**Begin here** [point to 1] **and draw a line from 1 then to A then to 2 and so on.**

**End here** [point to E]**”**

* Scoring -- Score one point if the participant successfully draws the following pattern

1-A-2-B-3-C-4-D-5-E without drawing any lines that cross. Any error that is not immediately self-corrected ears a score of 0.

**Visuoconstructional Skills (Cube)**

* Administration -- Give the following instructions, pointing to the cube:

**“Copy this drawing as accurately as you can, in the space below”**.

* Scoring – Score 1 point for a correctly executed drawing:
  + Drawing must be three-dimensional
  + All lines are drawn
  + No line is added
  + Lines are relatively parallel, and their length is similar (rectangular prisms are accepted)

**Visuoconstructional Skills (Clock)**

* Administration -- Indicate the right third of the space and give the following instructions:

**“Draw a clock. Put in all the numbers and set the time to 10 after 11”.**

* Scoring – Score 1 point for each of the following three criteria:
  + Contour (1 pt.): the clock face must be a circle with only minor distortion acceptable (e.g., slight imperfection on closing the circle).
  + Numbers (1 pt.): all clock numbers must be present with no additional numbers; numbers must be in the correct order and placed in the approximate quadrants on the clock face; Roman numerals are acceptable; numbers can be placed outside the circle contour.
  + Hands (1 pt.): there must be two hands jointly indicating the correct time; the hour hand must be clearly shorter than the minute hand; hands must be centered within the clock face with their junction close to the clock center.

**Naming**

* Administration -- Beginning on the left, point to each figure and say:

**“Tell me the name of this animal”.**

* Scoring – Score 1 point each for the following responses: (1) camel or dromedary, (2) lion, (3) rhinoceros or rhino

**Memory**

* Administration -- The examiner reads a list of 5 words at a rate of one per second, giving the following instructions:

**“This is a memory test. I am going to read a list of words that you will have to remember now and later on. Listen carefully. When I am through, tell me as many words as you can remember. It doesn’t matter in what order you say them”.**

Mark a check in the allocated space for each word the participant produces on this first trial. When the participant indicates that (s)he has finished (has recalled all words), or can recall no more words, read the list a second time with the following instructions:

**“I am going to read the same list for a second time. Try to remember and tell me as many words as you can, including words you said the first time.”**

Put a check in the allocated space for each word the participant recalls after the second trial. At the end of the second trial, inform the participant that (s)he will be asked to recall these words again by saying,

**“I will ask you to recall those words again at the end of the test.”**

* Scoring -- No points are given for Trials One and Two.

**Attention**

*Forward Digit Span:*

* Administration -- Give the following instructions:

**“I am going to say some numbers and when I am through, repeat them to me exactly as I said them”.**

Read the five number sequence at a rate of one digit per second.

*Backward Digit Span:*

* Administration -- Give the following instruction and then read the 3-number sequence at a rate of 1 digit per second:

**“Now I am going to say some more numbers, but when I am through you must repeat them to me in the backwards order.”**

* Scoring: Score 1 point for each sequence correctly repeated, (N.B.: the correct response for the backwards trial is 2-4-7).

*Vigilance:*

* Administration – Give the following instructions and then read the list of letters at a rate of 1 per second:

**“I am going to read a sequence of letters. Every time I say the letter A, tap your hand once. If I say a different letter, do not tap your hand”.**

* Scoring -- Score one point for 0-1 errors (an error is a tap on a wrong letter or a failure to tap on letter A)

*Serial 7s:*

* Administration -- Give the following instructions(and repeats it if necessary):

**“Now, I will ask you to count by subtracting seven from 100, and then, keep subtracting seven from your answer until I tell you to stop.”**

* Scoring -- Score 0 points for no correct subtractions, 1 point for 1 correct subtraction, 2 points for 2-3 correct subtractions, and 3 points if the participant successfully makes 4-5 correct subtractions. Count each correct subtraction of 7 beginning at 100. Each subtraction is evaluated independently; that is, if the participant responds with an incorrect number but continues to correctly subtract 7 from it, give a point for each correct subtraction. For example, a participant may respond “92 – 85 – 78 – 71 – 64” where “92” is incorrect, but all subsequent numbers are subtracted correctly. This is one error, and the item would be given a score of 3.

**Sentence Repetition**

* Administration -- Give the following instructions:

**“I am going to read you a sentence. Repeat it after me, exactly as I say it** [pause]**: I only know that John is the one to help today.”**

Following the response, say:

**“Now I am going to read you another sentence. Repeat it after me, exactly as I say it** [pause]**: The cat always hid under the couch when dogs were in the room.”**

* Scoring -- Score 1 point for each sentence correctly repeated. Repetition must be exact. Be alert for errors that are omissions (e.g., omitting "only", "always"), substitutions (e.g., "hides" for "hid", altering plurals, "John is the one who helped today"), or additions.

**Verbal Fluency**

* Administration – Give the following instructions:

**“Tell me as many words as you can think of that begin with a certain letter of the alphabet that I will tell you in a moment. You can say any kind of word you want, except for proper nouns (like Bob or Boston), numbers, or words that begin with the same sound but have a different suffix, for example, love, lover, loving. I will tell you to stop after one minute. Are you ready?** [Pause] **Now, tell me as many words as you can think of that begin with the letter F.** [time for 60 sec]. **Stop.”**

* Scoring -- Allocate one point if the participant generates 11 words or more. Record the participant’s response in the bottom or side margins.

**Abstraction*:***

* Administration *--* Ask the participant to explain what each pair of words has in common, starting with the example:

**“Tell me how an orange and a banana are alike”.**

If the participant answers in a concrete manner, then say only one additional time:

**“Tell me another way in which those items are alike”.**

If the participant does not give the appropriate response (fruit), say,

**“Yes, and they are also both fruit.”**

Do not give any additional instructions or clarification. After the practice trial, say:

**“Now, tell me how a train and a bicycle are alike”.**

Following the response, administer the second trial, saying:

**“Now tell me how a ruler and a watch are alike”.**

Do not give any additional instructions or prompts.

* Scoring -- Only the last two item pairs are scored. Give 1 point to each item pair correctly answered. The following responses are acceptable: train-bicycle = means of transportation, means of travelling, you take trips in both; ruler-watch = measuring instruments, used to measure. These responses are not acceptable: train-bicycle = they have wheels; ruler-watch = they have numbers.

**Delayed Recall:**

* Administration *--* Give the following instructions:

**“I read some words to you earlier, which I asked you to remember. Tell me as many of those words as you can remember.”**

Make a check mark (3) in the allocated space for each word correctly recalled spontaneously without any cues.

* Scoring -- Score 1 point for each word recalled freely without any cues.

\***\*\*Optional:** Following the delayed free recall, prompt the participant with the semantic category cue provided below for any word not recalled. Make a check mark in the allocated space if the participant remembered the word with the help of a category or multiple-choice cue. Prompt all non-recalled words in this manner. If the participant does not recall the word after the category cue, give a multiple-choice trial, using the following example instruction, **“Which of the following words do you think it was, ‘nose, face, or hand’?”** Use the following category and/or multiple-choice cues for each word, when appropriate:

**FACE:** part of the body // nose, face, hand

**VELVET:** type of fabric // denim, cotton, velvet

**CHURCH:** type of building // church, school, hospital

**DAISY**: type of flower // rose, daisy, tulip

**RED:** a colour // red, blue, green

Scoring: No points are allocated for words recalled with a cue. A cue is used for clinical information purposes only and can give the test interpreter additional information about the type of memory disorder. For memory deficits due to retrieval failures, performance can be improved with a cue. For memory deficits due to encoding failures, performance does not improve with a cue.

**Orientation**:

* Administration *--* Give the following instructions:

**“Tell me the date today”.**

If the participant does not give a complete answer, then prompt accordingly by saying:

**“Tell me the** [year, month, exact date, and day of the week].**”**

Then say:

**“Now, tell me the name of this place, and which city it is in.”**

* Scoring -- Give 1 point for each item correctly answered. The participant must tell the exact date and the exact place (name of hospital, clinic, office). Score 0 points if the participant makes an error of one day for the day and date.