Montreal Cognitive Assessment Basic (MoCA-B)  
Administration and Scoring Instructions

The Montreal Cognitive Assessment (MoCA) has been designed as a rapid screening instrument to detect mild cognitive impairment (MCI). It was validated in a group of highly educated elderly (the overall mean education years was 13 years) to detect MCI subjects and help separate them from healthy subjects. However, many items of this instrument are highly dependent on education. The new version of MoCA named Montreal Cognitive Assessment – Basic (MoCA-B) was developed for screening MCI in illiterate and low education populations. MoCA-B assesses the same cognitive domains as the original MoCA: executive function, language, orientation, calculation, conceptual thinking, memory, visuoperception (instead of visuoconstructional skills), attention and concentration. Time to administer the MoCA-B is approximately 15 minutes. The total possible score is 30 points.

**START TIME:** Start by writing the time (hour-minute-second) you start the instruction for the first part of the test (Executive function) in the right-hand column at the top of the test.

1. **Executive function (Alternating Trail Making)**

**Administration:** The examiner instructs the subject: “Please draw a line, going from a square with a number alternating to a square with a dot(s) in increasing order. Begin here [point to a square with number 1] and draw a line from the square with number 1 to a square with one dot [point to a square with one dot]. Then draw a line to a square with number 2 [point to a square with number 2] then to a square with two dots [point to a square with two dots] and so on. End here [point to a square with six dots].”

**Scoring:** The correct pattern is as the following:

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1→.→2→.→3→.→4→..→5→..→6→.
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1 point is granted if the subject draws the correct pattern  
No point is granted if the subject draws the incorrect pattern or make some corrections

2. **Immediate recall**

**Administration:** The examiner instructs the subject of the following: “This is a memory test. I am going to read to you a list of five words. You have to remember them. Listen carefully. When I finish, please tell me as many words as you can remember. It doesn’t matter in what order you say them.” Then the examiner reads a list of five words (rose, chair, hand, blue, spoon) at a rate of one per second. Mark a check in the provided space for each word the subject can remember after the first trial. When the subject 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 instruction: “I am going to read the same words a second time. Try to remember and tell me as many words as you can, including words you said the first time.” Check each word the subject recalls after the second trial in the allocated space.
After the end of the second trial, inform the subject that (s)he will be asked to recall these words again later in the test with this instruction: “Please remember these words, I will ask you to recall them again later”

Scoring: No points are allocated for this part.

3. Fluency

Administration: The examiner gives the following instructions: “I want you to say as many words as you can think of that are FRUITS. You have 60 seconds. Go ahead. [Stop after 60 seconds] Stop.”

The examiner should record all the words in the provided space to make sure that any repeated words are not counted.

Scoring: 2 points are allocated if the subject can produce 13 words or more
1 point is allocated if the subject can produce 8-12 words
No point is allocated if the subject can produce 7 words or less

4. Orientation

Administration: The examiner gives the following instructions: “Please do not look at your watch or any clock, could you tell me what time it is?” Then ask the next question by saying: “Now, tell me the day of the week, month, and year.” After that, say: “Now, tell me the name of this place, and the name of the city.”

Scoring: Give one point for each item correctly answered. For the correct time, a difference of two hours and less from the real time is accepted. The subject must tell the exact day of the week and the exact place (name of hospital, clinic, office). The local year or month systems are accepted.

5. Calculation

Administration: The examiner instructs as follows: “Imagine that you have a lot of 1 dollar coins/bills, 5 and 10 dollar coins/bills in your pocket. Please provide me with 3 ways to pay for an item that costs 13 Dollars. You cannot ask for change, you should provide the exact amount of 13 dollars.” In case the subject provides a way to pay that requires change, the examiner can encourage the subject once: “Are there any other ways?” The examiner should record the responses in the space provided.

Scoring: 3 points are allocated if the subject gives 3 correct ways of payment.
2 points are allocated if the subject gives 2 correct answers.
1 point is allocated if the subject gives 1 correct answer.
No point is allocated if the subject cannot give any correct answer.

6. Abstraction

Administration: The subject is asked to provide the category to which a pair of words belong to. Start with the example: “To which category an orange and a banana belong to?” If the subject answers in a concrete manner, then say only one additional time: “Tell me another category to which these items belong to?” If the subject cannot respond correctly [fruit], say: “Yes, and they are also in the category of fruits”. Do not give any
additional instruction or clarification. After the practice trial, say: “Now, please tell me to which category a train and a boat belong to?” If the first response is not appropriate, say only one additional time: “Is there any other category to which they belong to?” Then ask the second and third question with the same instruction as the previous: “Now tell me to what category do north and south belong to?” and “Now tell me to what category do drum and flute belong to?” Do not give any additional instructions or prompts.

**Scoring:** Only the last three item pairs are scored. Give 1 point for each item pair correctly answered. The following responses are acceptable:

- **train-boat:** vehicles, for travelling, means of transportation
- **north-south:** region, direction
- **drum-flute:** musical instrument, entertainment

The following responses are not acceptable:

- **train-boat:** They are made from iron. -or- They need an engine to work. -or-
  - They consume oil, petrol or gasoline.
- **drum-flute:** They are made from wood or any other material, produce sound

**7. Delayed recall**

**Administration:** The following instructions are given to the subject: “I have read a few words to you earlier, which I asked you to remember. Please tell me as many of those words as you can remember. Do not worry if you can’t remember all of them or their order.” Make a check mark (✓) for each word correctly recalled spontaneously without any cues, in the allocated space.

**Scoring:** 1 point is given for each word recalled spontaneously without any cues.

**Administration of cues:** Following the delayed free recall trial, prompt the subject with the semantic category cue provided below for any word not recalled. Make a check mark (✓) in the allocated space if the subject remembered the word with the help of a category or multiple-choice cue. Prompt all non-recalled words in this manner. If the subject does not recall the word after the category cue, give him/her a multiple choice trial, using the following example instruction, “Which of the following words do you think it was ROSE, DAISY or TULIP?”

Use the following category and/or multiple-choice cues for each word, when appropriate:

- **ROSE:** category cue: type of flower multiple choice: rose, daisy, tulip
- **CHAIR:** category cue: type of furniture multiple choice: table, chair, bed
- **HAND:** category cue: body part multiple choice: foot, hand, knee
- **BLUE:** category cue: colour multiple choice: blue, brown, red
- **SPOON:** category cue: kitchen instrument multiple choice: fork, knife, spoon

**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.
8. Visuoperception

**Administration:** In the visuoperception part of the complementary work sheet, the examiner points to the drawing and says: "Now I would like you to look at these drawings. There are many overlapped objects. Please identify as many objects as you can. If you cannot name some of the objects, please outline those objects or tell me about their function. You are not allowed to rotate the picture. You can take your time but not more than 2 minutes. Are you ready? Let start."

Stop the subject after 60 seconds after the end the instructions. The subject is not allowed to rotate the paper. Make a check mark next to each word correctly identified in the allocated visuoperception section of the scoring sheet.

**Scoring:** The drawing is composed of 10 objects: scissors, cup, T-shirt, watch, banana, leaf, lamp, key, candle and spoon.
- 3 points are allocated if the subject can identify 9-10 objects.
- 2 points are allocated if the subject can identify 6-8 objects.
- 1 point is allocated if the subject can identify 4-5 objects.
- No point is allocated if the subject can identify 3 objects or less.

9. Naming

**Administration:** In the naming part of the complementary work sheet, point to each animal beginning from left to right and from above to below and say: "Tell me the name of this animal."

**Scoring:** 1 point is awarded for each correct response as shown below:
1. ZEBRA [Horse, dunkey are not acceptable.]
2. PEACOCK [Bird is not acceptable.]
3. TIGER [Cheetah, leopard, black tiger are not acceptable.]
4. BUTTERFLY [Insect is not acceptable.]

10. Attention

**Administration:** In the attention part of the complementary work sheet, the examiner points to the row of numbers with white background and says "Do you see the numbers with white background. Please read out loud the numbers in the CIRCLES and not in the squares or triangles. Start at this point [point at the beginning of the row (①)] and finish at this point [point at the end of the row (⑤)]. Let's start."

**Scoring:** 1 point is allocated if the subject completes the task with 1 error or less. No point is allocated if the subject completes the task with 2 errors or more.

An error is defined as follows: Reading a number which is not in the circle, skipping the number in the circle without reading it, or reading the number in the wrong order, and returning to the previous number. The number of errors is recorded in the provided space for scoring.
Administration: In the attention part of the complementary work sheet, the examiner points to the row of numbers with dark background and says "Do you see the numbers with dark background. Please read out loud the numbers in the CIRCLES and SQUARES and not in the triangles. Start at this point [point at the beginning of the first row ( )]. Continue to the end of the first row then restart at the second row and finish at this point [point at the end of the second row ( )]."

Scoring: 2 points are allocated if the subject completes the task with 2 errors or less. 1 point is allocated if the subject completes the task with 3 errors. No point is allocated if the subject completes the task with 4 errors or more.

An error is defined as follows: Reading a number which is not in the circle or square, skipping the number in the circle or square without reading it, or reading the number in the wrong order, and returning to the previous number. The number of errors is recorded in the provided space for scoring.

END TIME: Write the end time (hour-minute-second) when the subject finishes the last part of the test (attention), and inscribe total testing time (minutes, seconds) in the right-hand column at the bottom of the test.

Additional instruction for the MoCA-B test
For every section and task in the test, instructions may be repeated only once unless specified otherwise.

TOTAL SCORE: Sum all sub-item scores listed on the right-hand side column of the test. The maximum score is 30 points.

To correct for any residual educational bias, 1 point was added to the total score of participants with less than 4 years of education (if score <30).

To correct for literacy, 1 additional point was added to the score of participants considered illiterate, regardless of the participant’s education level (if score<30).

Illiteracy was defined as the inability to read or write fluently in daily living.