Montreal Cognitive Assessment  
(MoCA) 
Version 7.1 Bengali version

Administration and Scoring Instructions

The Montreal Cognitive Assessment (MoCA) was designed as a rapid screening instrument for mild cognitive dysfunction. It assesses different cognitive domains: attention and concentration, executive functions, memory, language, visuoconstructual skills, conceptual thinking, calculations, and orientation. Time to administer the MoCA is approximately 10 minutes. The total possible score is 30 points; a score of 26 or above is considered normal.

1. **Alternating Trail Making:**

   **Administration:** The examiner instructs the subject: “পর্যায়ক্রমে সংখ্যা-অক্ষর-সংখ্যা-অক্ষর অনুমোদী গোল চাকতিতে থেকে পেসিল দিয়ে লাইন কেটে সংযোগ করতে হবে। এখান থেকে শুরু করলে (‘১’ দেখিয়ে বললু)। ‘১’ থেকে ‘ক’, ‘ক’ থেকে ‘২’, ‘২’ থেকে ‘খ’ এরকম করলে এই অক্ষরটি (‘ঝ’ দেখিয়ে বললু) অবি লাইন কেটে সংযোগ করলে।”

   **Scoring:** Allocate one point if the subject successfully draws the following pattern:  
   ১ – ২ – ৩ – ৪ – ৫, without drawing any lines that cross. Any error that is not immediately self-corrected earns a score of 0.

2. **Visuoconstructual Skills (Cube):**

   **Administration:** The examiner gives the following instructions, pointing to the cube: “এই ছবিটা দেখুন এবং যতটা সম্ভব এটা ঠিক ভাবে আঁকার চেষ্টা করলে, নিচের জায়গাটাতে।”

   **Scoring:** One point is allocated 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)

   A point is not assigned if any of the above-criteria are not met.

3. **Visuoconstructual Skills (Clock):**

   **Administration:** Indicate the right third of the space and give the following instructions: “একটা ঘড়ির ছবি আঁকল। তাতে সব নম্বরগুলো লিখেন আর ঘড়ির কাঁটাগুলো এমনভাবে আঁকল যাতে বোঝা যায় এগাছে বেঝে দশ হয়েছে।”

   **Scoring:** One point is allocated 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 centred within the clock face with their junction close to the clock centre.

A point is not assigned for a given element if any of the above-criteria are not met.

4. Naming:

Administration: Beginning on the left, point to each figure and say: “এই জুনটার নাম বলুন। ”

Scoring: One point each is given for the following responses: (1) lion (2) rhinoceros or rhino (3) camel or dromedary.

5. Memory:

Administration: The examiner reads a list of 5 words at a rate of one per second, giving the following instructions: “এটা একটা মনে রাখার পরীক্ষা। আমি কতগুলো শব্দ বলব। মন দিয়ে স্থননবন এবং মনে রাখার চেষ্টা করবেন, কারণ আপনাকে পারে এই শব্দগুলো সব বলতে হবে। আপনি যে কোনও ক্রমে/অনুযায়ী শব্দগুলোকে বলতে পারেন।” Mark a check in the allocated space for each word the subject produces on this 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 instructions: “আমি আপের মতে একই শব্দগুলো আবার পড়িয়ে শোনব। যতটা মনে রাখতে পারবেন আমাকে বলবেন। যেই শব্দগুলো আং বলেছেন সেগুলোকেও বলতে হবে।” Put a check in the allocated space for each word the subject recalls after the second trial.
At the end of the second trial, inform the subject that (s)he will be asked to recall these words again by saying, “আমি যেই শব্দগুলো আপনাকে বললাম, আপনি মনে রাখার চেষ্টা করবেন। আমি পরে আবার আপনাকে জিজ্ঞেস করব।”

Scoring: No points are given for Trials One and Two.

6. Attention:

Forward Digit Span: Administration: Give the following instruction: “আমি আপনাকে কতগুলো নম্বর বলব, আমার বলা শেষ হয়ে গেলে সেগুলোকে একই রকম ভাবে বলবেন।” Read the five number sequence at a rate of one digit per second.

Backward Digit Span: Administration: Give the following instruction: “এইবার আমি আপনাকে কতগুলো নম্বর বলব, আমার বলা শেষ হয়ে গেলে সেগুলোকে পেছন থেকে সামনে অনুযায়ী সাজিয়ে বলবেন।” Read the three number sequence at a rate of one digit per second.

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

Vigilance: Administration: The examiner reads the list of letters at a rate of one per second, after giving the following instruction: “আমি আপনাকে কতগুলো অক্ষর পর পর বলে যাব। যখনই এ'
Serial 7s: Administration: The examiner gives the following instruction: “This is a tapping test. You will hear a series of numbers and you will tap them on the table. If you make a mistake, you’ll have to keep tapping until you get it right.” Give the instruction twice if necessary.

Scoring: This item is scored out of 3 points. Give no (0) points for no correct subtractions, 1 point for one correction subtraction, 2 points for two-to-three correct subtractions, and 3 points if the participant successfully makes four or five 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 the “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: The examiner gives the following instructions: “The examiner asks a series of questions. You will hear a series of questions and you will repeat them back to the examiner. Each question must be repeated exactly.” Following the response, say: “Repeat the question exactly.”

Scoring: Allocate 1 point for each sentence correctly repeated. Repetition must be exact. Be alert for errors that are omissions (e.g., omitting "only", "always") and substitutions/additions (e.g., "John is the one who helped today;" substituting "hides" for "hid", altering plurals, etc.). [Note: Original sentences are, "I only know that John is the one to help today" and "The cat always hid under the couch when dogs were in the room"]

Verbal fluency:
Administration: The examiner gives the following instruction: “The examiner asks a series of questions. You will hear a series of questions and you will repeat them back to the examiner. Each question must be repeated exactly.” Following the response, say: “Repeat the question exactly.”

Scoring: Allocate one point if the subject generates 11 words or more in 60 sec. Record the subject’s response in the bottom or side margins.
9. **Abstraction:**

**Administration:** The examiner asks the subject to explain what each pair of words has in common, starting with the example: “আমাকে বলুন কমলালেরু আর কলার মধ্যে কি মিল আছে ?” If the subject answers in a concrete manner, then say only one additional time: “আমাকে বলুন এই দুটো মধ্যে আর অন্য কি মিল আছে ?” If the subject does not give the appropriate response (ফল) say, “হ্যাঁ, এরা দুটোই ফল !” Do not give any additional instructions or clarification. After the practice trial, say: “ট্রেন আর সাইকেল এর মধ্যে কি মিল আছে ?” Following the response, administer the second trial, saying: “স্কেল আর ঘড়ির এর মধ্যে কি মিল আছে ?” 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.
The following responses are not acceptable: Train-bicycle = they have wheels; Ruler-watch = they have numbers.

10. **Delayed recall:**

**Administration:** The examiner gives the following instruction “কিছুকলে আগে আমি কোন শব্দ অপনাকে মান রাখতে বলেছিলাম ওই শব্দগুলো আপনি আমাকে আবার বলুন !” Make a check mark (√) for each of the words correctly recalled spontaneously without any cues, in the allocated space.

**Scoring:** Allocate 1 point for each word recalled freely without any cues.
### Optional:
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, “কোন শব্দটা আমি আপনাকে বলেছিলাম, নাক, চোখ নাকি হাত?”

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

| চোখঃ | category cue: শরীরের অংশ | multiple choice: নাক, চোখ, হাত |
| শাড়িঃ | category cue: এক ধরনের কাপড় | multiple choice: পোটি, টিশার্ট, শাড়ি |
| মন্দিরঃ | category cue: এক ধরনের ভবন | multiple choice: মন্দির, কুল, হাসপাতাল |
| গোলাপঃ | category cue: এক ধরনের ফুল | multiple choice: গোলাপ, ফুল, জামান |
| লালঃ | category cue: এক ধরনের রঙ | multiple choice: লাল, নীল, সবুজ |

**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.

### 11. Orientation:

**Administration:** The examiner gives the following instructions: “আজকে কত তারিখ?” If the subject does not give a complete answer, then prompt accordingly by saying: “আমাকে বলুন আজকে কত সাল, মাস, তারিখ আর সপ্তাহের কোন দিন।” Then Say: “এবার আমাকে বলুন যে এই এলাকার নাম কি আর এই শহরটার নাম কি?”

**Scoring:** Give one point for each item correctly answered. The subject must tell the exact date and the exact place (name of hospital, clinic, office). No points are allocated if subject makes an error of one day for the day and date.

**TOTAL SCORE:** Sum all sub scores listed on the right-hand side. Add one point for an individual who has 12 years or fewer of formal education, for a possible maximum of 30 points. A final total score of 26 and above is considered normal.