



FROM PAPER
TO DIGITAL...
AND BEYOND



MoCA
COGNITION

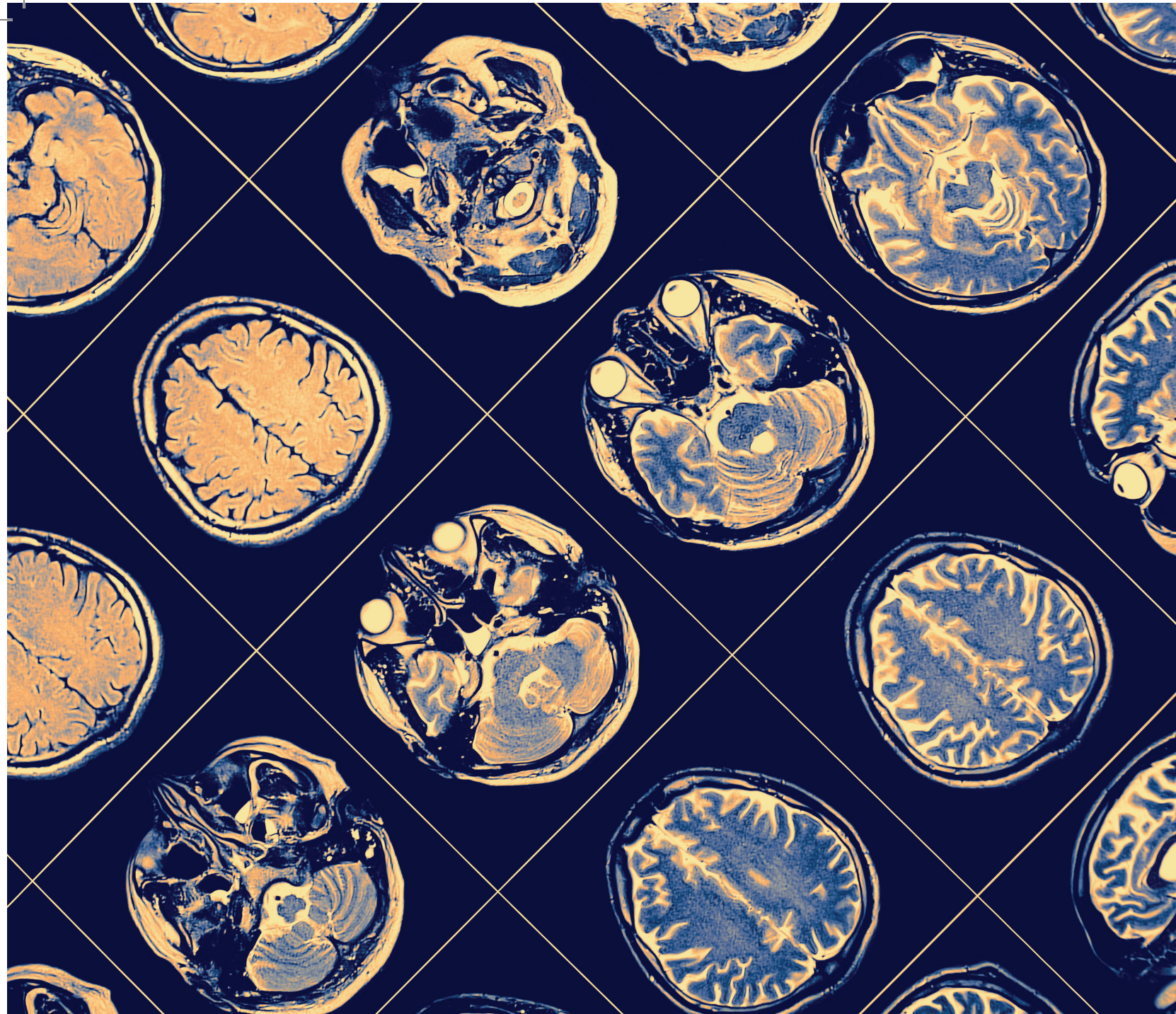



TABLE OF CONTENTS



EARLY DETECTION MAKES A DIFFERENCE	04
MoCA TIMELINE: A HISTORY OF INNOVATION	06
WHAT CAN MoCA DETECT?	08
WHO CAN USE MoCA?	10
MoCA DUO APP	12
PAPER VERSIONS	15
OFFICIAL TRAINING & CERTIFICATION	18
MoCA CLINIC AND MoCA RESEARCH	21
OUR FOUNDER	22
REACH OUT	23

EARLY DETECTION MAKES A DIFFERENCE.

We believe
everyone deserves
a **memorable life.**





Our shared experience over the past few years—overcoming the challenges of COVID-19 and adopting new procedures and technologies—has changed the global landscape and especially health care. Some of the most important innovations in MoCA since its inception in 1996 have been the fruit of this transformative period.

More and more healthcare professionals are administering MoCA remotely by telephone or videoconference, both methods shown to be highly sensitive in many peer-reviewed studies. Usage of our mobile application is increasing for clinicians and researchers who aim to move away from paper, improve precision and integrate with EHR systems. We have also responded to users' demand for remote assessment options with a digital solution that I am very eager to share with you all soon.

With growing adoption of MoCA across different specialties, patient populations, and settings, it became clear to us that a standardized training and certification program is a necessity. We are delighted by the high percentage of professionals who are already MoCA Certified and by the overwhelmingly positive feedback from clinicians, researchers, academic figures, and associations who champion the program.

Ensuring access to MoCA is fundamental for us. For this reason, MoCA Certification is available at no cost for all students, academic researchers, and faculty. We continue to develop, validate, and translate paper-based tests that clinicians and academic researchers can freely download from our website.

We are thankful to include you on our journey from a single paper test to an advanced multi-platform cognitive assessment tool used around the world.

Warmest regards,

Ziad Nasreddine MD, Neurologist

MoCA Creator, Copyright Owner

CEO of MoCA Cognition



MoCA TIMELINE: A history of innovation

.....
1992

During residency at Sherbrooke University, followed by fellowship at UCLA, Dr. Nasreddine recognizes the need for a more comprehensive cognitive screening tool.

.....
1996

The first version of MoCA is released.

.....
2000

MoCA achieves its first validation-excellence in distinguishing impairment amongst consecutive patients and control groups.

.....
2003

A new study confirms the ability to distinguish normal controls from subjects with Mild Cognitive Impairment or Mild Alzheimer's disease. [1]

.....
2005

The MoCA Validation Study is identified by Thomson Reuters' Essential Science Indicators as one of the most cited papers in mild cognitive impairment research. [1]

.....
2006

MoCA is recommended by the NIH and Canadian Stroke Consortium for Vascular Cognitive Impairment.

[1]Nasreddine et al.(2005), JAGS

[2]Canadian Institute of Health Research

2007

The Canadian Consensus Conference for Diagnosis and Treatment of Dementia Guidelines for Alzheimer's Disease recommends MoCA.

2013

MoCA is named in Canada's "Top Innovations in Alzheimer's Research" report. [2]

2015

First important validation study of MoCA by telephone - Wong et al. (2015), Stroke

2018

Validation study for MoCA application - Berg et al. (2018), Journal of Alzheimer's Disease

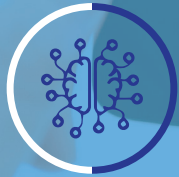
White House and doctors worldwide select MoCA as the preferred test for screenings.

2021

MoCA Certification policy implemented. Made free for academia.

TODAY

MoCA's superior sensitivity and accuracy for detecting MCI demonstrated in over 2,000 studies. Digital and paper MoCA versions used around the world. Paper tests available in 100 languages and dialects.



WHAT CAN **MoCA** DETECT?

By evaluating several cognitive domains that others do not, MoCA is a proven, powerful cognitive screening tool that assesses:

- + Short term memory
- + Visuospatial abilities
- + Executive functions
- + Attention, concentration, and working memory
- + Language
- + Orientation to time and place



MoCA can uncover cognitive impairment associated with some of the most debilitating disorders, including:

Alzheimer's disease

Parkinson's disease

Huntington's disease

Lewy Body

VCI/Stroke

Fronto-temporal dementia

Brain metastasis

ALS

Sleep behavior disorder

Brain tumors

Multiple sclerosis

Head trauma

Depression

Schizophrenia

Heart failure

Substance abuse

HIV

COVID

and more



WHO CAN USE MoCA?

All healthcare professionals and researchers who have successfully completed MoCA Certification (see page 17 for more details) can administer and score a paper-based MoCA test. Only clinicians with specialized training and licensing in cognition can interpret the results.

Certification is recommended, but not required for the tablet-based MoCA app because of its automated administration and scoring features.

The following healthcare professionals are among the most active MoCA users:

- + **Nurse Practitioners**
- + **Psychologists**
- + **Occupational Therapists**
- + **Speech-Language Pathologists**
- + **Family Doctors**
- + **Psychiatrists**
- + **Neurologists**
- + **Geriatricians**





MoCA is the preferred cognitive screening tool used by clinicians and researchers at leading institutions including:

Cleveland Clinic

Harvard

Mayo Clinic

Oxford

Kaiser Permanente

Karolinska Institute

US Veterans Affairs
Hospitals

National Institutes of Health

UPMC

National Institute of Aging

The White House / Walter
Reed Army Medical Center

National Alzheimer's
Coordinating Centers

And many more

A DIGITAL SOLUTION

for a modern and paperless healthcare organization



MoCA
DUO

Our tablet-based DUO application is the most advanced version of MoCA for enhanced in-person administration.

Designed to be easier to administer than the paper version, with automated features saving time for clinicians and researchers, and live instructions ensuring greater standardization.

Automated administration and scoring means there is no need for training.



EHR integration

MoCA Duo allows for quick and simple export of results in PDF or CSV format that can be uploaded to EMR/EHR.



MoCA can also work directly with your EHR provider (Cerner, Epic, etc.) to develop a custom-tailored integration for a seamless connection with automatic synchronization—saving even more time for healthcare professionals.

Available languages: English, French, Danish, Dutch, Finnish, German, Italian, Polish, Portuguese, Spanish, and Swedish.

Intelligent features include:



Draw on screen with finger or stylus—
or **use device camera** to photograph drawing on paper



Automatic scoring (“Trail Making”, “Cube”, “Clock”, “Subtraction”, “Naming” questions)

Speech-to-text recognition (“Verbal Fluency” question)

On-screen instructions adapted to previous answers provided

Suggestions appear for rater to select correct answer more quickly



Easy file creation and patient result storing for future review

Tracking of time spent on test and per question



Section for rater notes on each test

Hibernation mode and auto save features provide security and prevent data loss



Quick export/import of results to EMR. Direct custom integration possible

Go paperless.



MoCA Duo packages

PACKAGES	USERS
Starter	MoCA 8.1 1 Rater Email support Basic autocorrect features FREE for healthcare providers
Professional	MoCA 8.1, 8.2, 8.3 Multiple raters Phone/videocall support Full autocorrect features (Cube, Clock, etc.) Monthly subscription
Organization	MoCA 8.1, 8.2, 8.3 Multiple raters Phone/videocall support Full autocorrect features (Clock, Cube, etc.) Custom direct EHR integration Contact us for a quote



Electronic version of MoCA has been validated since 2018. Berg et al. published in the Journal of Alzheimer’s Disease: **“This study establishes adequate convergent validity between the MoCA and eMoCA (tablet-based app) among an adult population presenting with memory concerns.”**

New remote cognitive assessment solutions are coming soon!

Ideal for busy medical professionals and large research projects. Follow our website and newsletter for updates.

PAPER VERSIONS

The original MoCA in paper format (“MoCA Full”) is the most sensitive and validated cognitive screening tool, supported by over 2,000 peer-reviewed studies. MoCA Full is widely used internationally by various medical professionals and available in over 100 languages and dialects. Other MoCA versions are available for different patient populations and for special requirements of clinicians and researchers.

MoCA Full



Quickly and accurately test subjects for mild cognitive impairment, irrespective of etiology. Available in three versions to decrease possible learning effects when MoCA is administered every three months or less.

MoCA Full assesses:

- Short-term memory
- Visuospatial abilities
- Executive functions
- Attention, concentration, and working memory
- Language
- Orientation to time and place

Scored on 30 points and administered in approximately 10 minutes.

MoCA Basic

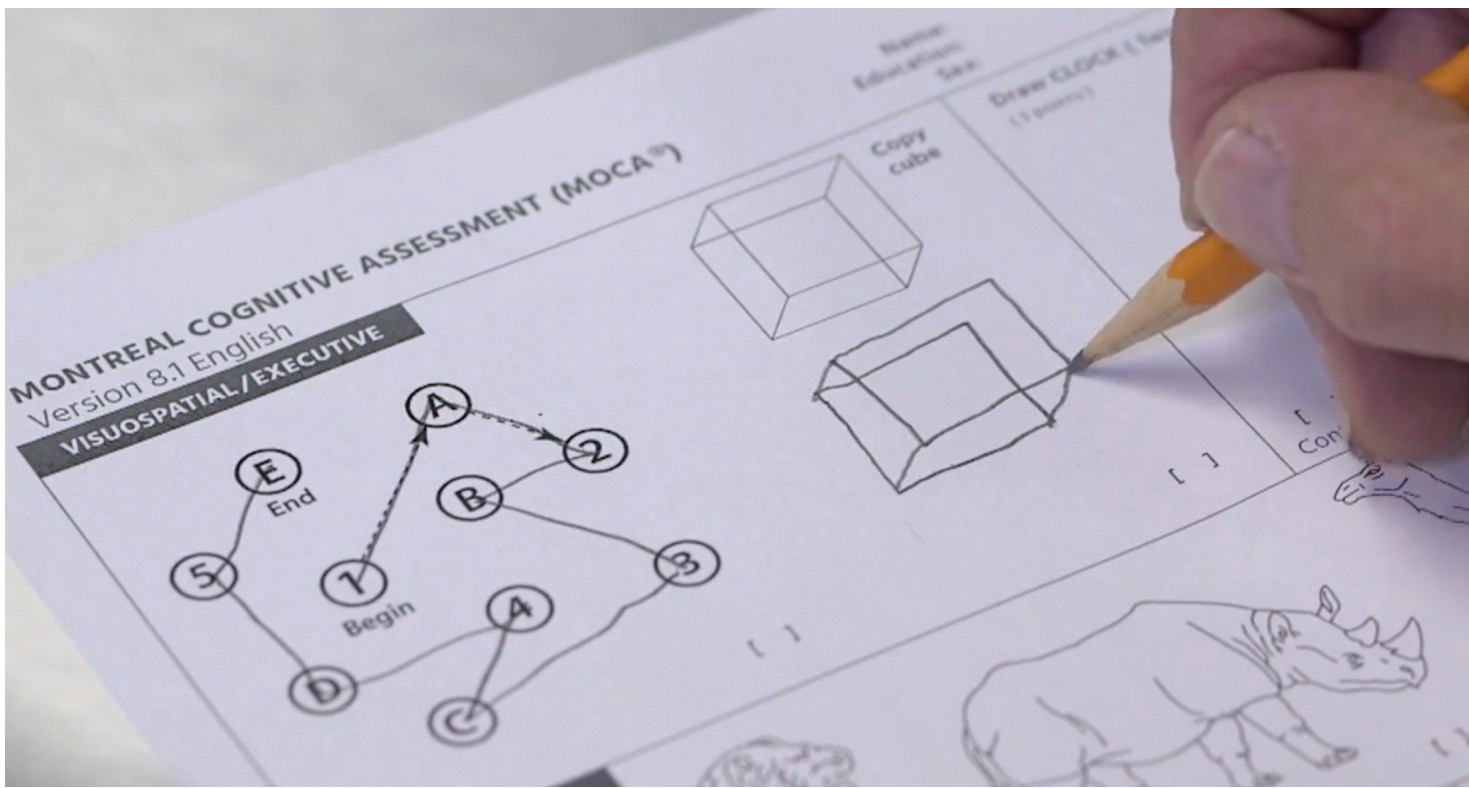


Adapted questions facilitate the detection of mild cognitive impairment in subjects in subjects who are illiterate or who possess a low education level (original validation study conducted with subjects with less than 5 years of education).

Validated in various international population, MoCA Basic “...addresses an unmet need by accurately screening for MCI in poorly educated older adults regardless of literacy.” (Julayanont et al., 2015, JAGS)

MoCA Basic assesses similar cognitive domains to MoCA Full.

Scored on 30 points and administered in approximately 15 minutes.



MoCA Blind / Telephone



Adapted for administration by voice only. Ideal for subjects with visual impairment and for remote assessment by telephone. Similar to MoCA Full, but items requiring visual abilities have been removed.

"The sensitivity and specificity of the MoCA Blind in the detection of Alzheimer's Disease remain excellent" (Wittich et al. 2010, JVIB)

"...a brief, valid, reliable, and feasible cognitive screen for telephone administration" (Wong et al., 2015, Stroke)

Scored on 22 points and administered in approximately 10 minutes.

MoCA 5 minute / Telephone



The 5-minute "Mini MoCA" is an abbreviated version of MoCA, composed of the tasks proven most sensitive to mild cognitive impairment, developed to allow for even quicker screening and remote evaluation, as it may be administered over the telephone.

"...a valid and reliable scale for detecting cognitive impairment in different clinical populations. It is administrable by phone and thus suitable for remote assessment as well as for large-scale screening and epidemiological studies." (Dujardin et al., 2021, Rev Neurol)

Scored on 15 points and administered in approximately 5 minutes.

MoCA Audiovisual



Performing MoCA by videoconference is simple and accurate. Download adapted content for easy administration of every MoCA question for remote audio-visual administration by clinician and researcher.

"...a feasible and easily accessible exam for both physicians and patients"
(Yu et al., 2021, PC&OR)

Watch our instructional video on how to properly administer MoCA by videoconference.

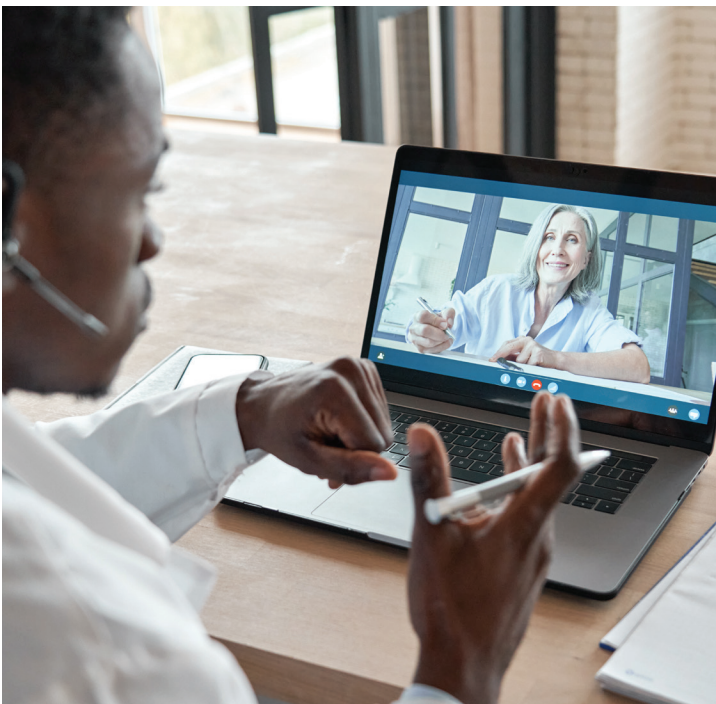
MoCA Hearing Impairment



Developed to facilitate the detection of cognitive impairment in subjects with a hearing impairment. The MoCA-HI assesses similar cognitive domains as MoCA Full using visual flash cards.

"...Easy to administer and reliable for screening cognitive impairment in the severely hearing impaired. No conversion factor is required in our prospectively tested cohort of cognitively intact subjects." (Lin et al., 2017, Laryngoscope)

Scored on 30 points and administered in approximately 10 minutes



"MoCA (Full) has a 90% accuracy rate (sensitivity) in detecting mild cognitive impairment compared to 18% for the MMSE"

(Nasreddine et al., 2005, JAGS)



OFFICIAL TRAINING & CERTIFICATION

The one-hour Training & Certification module was conceived to maintain MoCA's superior validity and was designed for busy medical professionals.

- + Care providers and researchers of all backgrounds will **gain applicable knowledge** of neuroanatomy and the cognitive domains that MoCA assesses.
- + You will **become more confident** in administering MoCA and explaining results to patients and families.
- + You will receive a **unique MoCA ID number and certificate**. Your name and certified status will automatically appear on the tests you administer.
- + **Limit errors and reduce legal risks** for healthcare professionals and organizations.



Successful completion of Training & Certification is required for clinicians and researchers using paper based MoCA.

MONTREAL COGNITIVE ASSESSMENT (MoCA)

NAME: Rachel, 68 Education: 12 Date of birth: 68 years old
 Sex: F DATE: August 19

VISUOSPATIAL / EXECUTIVE

Copy cube [✓] Draw CLOCK (Ten past eleven) (3 points) [✓] [✓] Numbers [✓] Hands [✓] 5/5

NAMING

[✓] [X] [X] 1/3

MEMORY

	FACE	VELVET	OSBORN	DANDY	RED	No points
For trial	✓	✓	✓	✓	✓	
Bad trial	✓	✓	✓	✓	✓	

ATTENTION

Read list of digits (4 digits). Subject has to repeat them in the forward order [X] 2 1 8 5 4
 Subject has to repeat them in the backward order [✓] 7 4 2 1/2

Read list of letters. The subject must tap with his hand at each letter A. No points if 2 or more [✓] FBACMNAJIKLEBAFKDEAAAJAMOFAB 1/1

Serial 7 subtraction starting at 100 [X] 98 72 [X] 86 55 [X] 79 [X] 75 [X] 69 0/3

LANGUAGE

Repeat: I only know that John is the one to help today. [✓] The cat always hid under the couch when dogs were in the room. [✓] 2/2

Fluency: Name maximum number of words in one minute that begin with the letter [X] 9 [X] 2 n words 0/1

ABSTRACTION

Similarity between e.g. banana - orange > fruit [✓] train - bicycle [X] watch - ruler 1/2

DELAYED RECALL

How to recall words	FACE	VELVET	OSBORN	DANDY	RED	Points for UNCLUED recall only
WITH NO CLUE	[X]	[X]	[X]	[X]	[X]	
Category cue	✓	✓	✓	✓	✓	
Multiple choice cue	✓	✓	✓	✓	✓	

Memory Index Score (MIS) MIS: 9 /15

ORIENTATION

[X] Date [✓] Month [✓] Year [✓] Day [✓] Place [✓] City 5/6

TOTAL 16/30

© J. Bourgeois MD www.mocatest.org

Not mandatory for MoCA app users due to the app's automated administration and scoring features.

- + Training, certification exam, access to all MoCA paper versions
- + Reduced rates for groups
- + Free with one-year MoCA Duo app subscription
- + Free for students, faculty members, academic researchers, and publicly operated institutions

Simply visit mocatest.org to begin your one-hour online training program, then complete the exam. Let your colleagues and department know because group discounts apply.



“Many thanks for this excellent service, I learned a lot, even though I’ve been administering MOCA since my training.”

- Attending Physician,
Geriatric Medicine, USA

“The video in the training that discussed the Analysis of Results, including the associated Anatomy and Pathology was very helpful.”

- Psychiatrist, USA

“It went through the MoCA comprehensively and explained a lot more than what is included in the written instructions”

- Occupational Therapist, Australia

“The videos are excellent learning materials which can help me to revise and ensure my techniques are accurate”

- Psychiatrist, Malaysia



MoCA CLINIC

MoCA Clinic is a high volume, high efficiency memory clinic that welcomes over 2,000 patients each year, along with their family members and aids. Operating since 1996, the robust clinic includes neurologists, geriatricians, GPs with expertise in geriatric medicine, RNs, occupational therapists, neuropsychologists, coordinators, assistants, and researchers.



For seniors with memory complaints or early diagnosed Alzheimer's disease, the clinic offers consultation, supportive treatment, guidance, and access to research studies for new medication trials.

MoCA RESEARCH & INNOVATION



MoCA Research & Innovation leverages the extensive patient population of the MoCA Clinic to host numerous clinical trials that test the efficacy of novel treatments. This center provides abundant opportunities for patients to access the most advanced pharmacological treatment options, while receiving personalized support for their condition.

We are constantly onboarding patients who fit the inclusion criteria for our multiple ongoing studies. Clinical trials are generally in phase 2 or 3 and focused on Alzheimer's disease and mild cognitive impairment. With the support of our clinical nurses, technicians, and assistants, the medications being studied can be administered intravenously, subcutaneously, transdermally, orally or by other method.

OUR FOUNDER



As a young person escaping a war-torn nation, Ziad Nasreddine came to North America. About a decade later, he completed medical school at the University of Sherbrooke in Quebec, Canada. Dr. Nasreddine later completed a fellowship in Cognitive Neurology/Neurobehavior at UCLA and became a board-certified Neurologist.

In 1992, during his residency, Dr. Nasreddine recognized the need for a more comprehensive cognitive screening tool that could better serve clinical settings. He began the journey of creating his own, more efficient, and complete test. In 2005, Dr. Nasreddine finished validation of the first version of a more specialized assessment that could directly support hospitals and specialty clinics with high volume of patients: the Montreal Cognitive Assessment—or MoCA.

Today, MoCA is used in almost every country and is available in nearly 100 languages and dialects. Updated and specialized versions of MoCA are used in hospitals, research facilities, and clinical settings around the world.

Along with his continued dedication to patients at his memory clinic, Dr. Nasreddine leads MoCA Cognition, a research and innovation-focused company driven to deliver the next generation of cognitive screening solutions.



Reach out

We are always open to discussing with:

- + **Clinicians**
- + **Professional associations**
- + **Researchers**
- + **Governments**
- + **Medical institutions**
- + **Industry**
- + **Universities**

For possible collaborations and for adapting our offering to best suit your needs.

We look forward to hearing from you.

info@mocatest.org

MoCA Cognition

4896 Taschereau Blvd Suite 230

Greenfield Park, Québec

Canada J4V 2J2



Through research and innovation,
we provide for the most accurate assessment
of cognitive performance.

Our leading cognitive screening tools
result in early diagnoses and treatment plans
to improve brain health and well-being.

Our mission is fueled by our passionate belief
that everyone deserves a

#MemorableLife

info@mocacognition.com