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Screening for Neurocognitive Impairment in HIV Infection

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Two Key Screenings

1.
Screening for Neurocognitive Impairment

2.
Screening for Neuropsychiatric Disorders

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Two Key Screenings

1.
Screening for Neurocognitive Impairment

2.
Screening for Neuropsychiatric Disorders

Advantages in common:

1. *Feasible: paper-based*
2. *Rapid: <10 minutes*
3. *Reliable: 75% - 95%*

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1. Neurocognitive Impairment

Name	*Reference*	*Duration*	*Pros*	*Cons*
CogState®	*Cysique et al, J Int Neuropsych Soc, 2006*	10-15 min	- 4 areas covered - Low practice effect	- Economical cost - Feasibility (computerized)
CAMCI® (Computer Assessment of Mild Cogn. Impairm.)	*Becker et al, AIDS Patient Care and STDs, 2011*	20 min	- 4 areas covered - Low practice effect	- Economical cost - Feasibility (computerized)
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MoCA® (Montreal Cognitive Assessment)	*Koski et al, HIV Medicine, 2011*	5-10 min	- Quantitative score - 4 areas covered	- Designed for aging - Limited specificity (42%)
NEU Screen	*Muñoz-Moreno et al, JAIDS, 2013*	5-10 min	- Good accuracy (74%, 81%) - No copyright restrictions	- Limited to Spanish speakers - No formal validation

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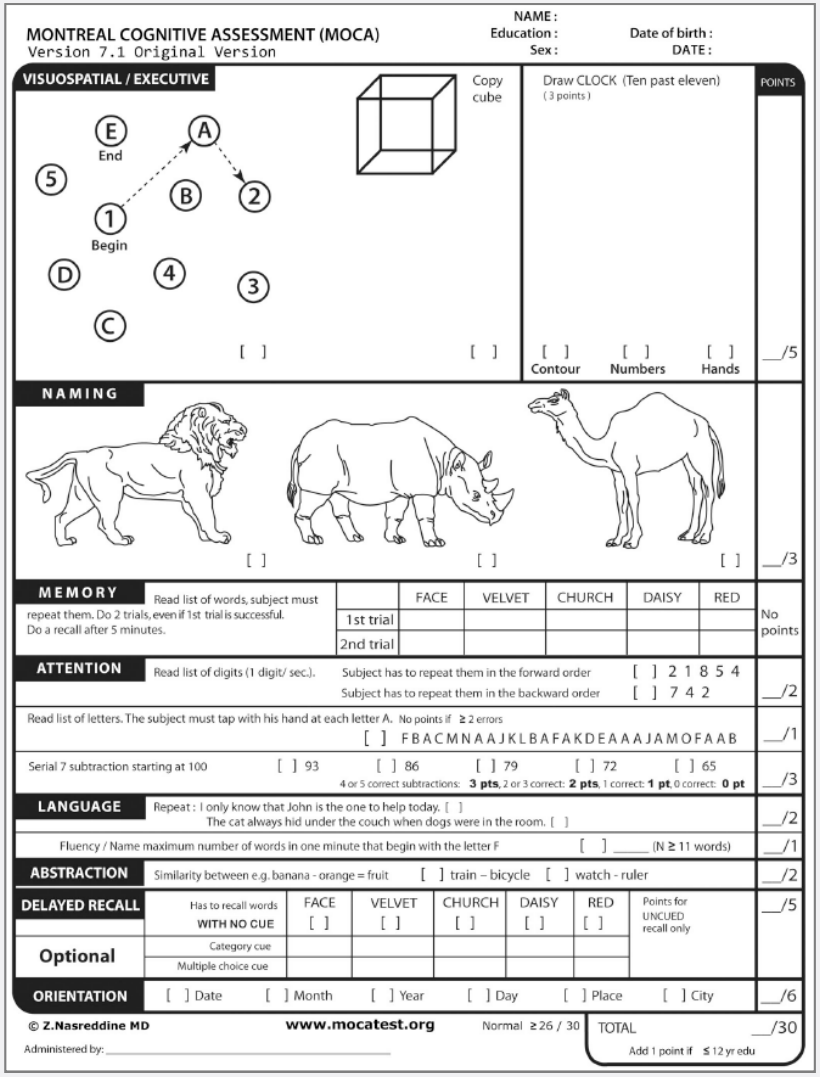
1. Neurocognitive Impairment



MONTREAL COGNITIVE ASSESSMENT (MOCA)
Version 7.1 Original Version

NAME :
Education :
Sex :
Date of birth :
DATE :

VISUOSPATIAL / EXECUTIVE — POINTS

Copy cube

Draw CLOCK (Ten past eleven) (3 points)

End · Begin · Contour · Numbers · Hands

__/5

NAMING

__/3

MEMORY — Read list of words, subject must repeat them. Do 2 trials, even if 1st trial is successful. Do a recall after 5 minutes.

	FACE	VELVET	CHURCH	DAISY	RED
1st trial					
2nd trial					

No points

ATTENTION — Read list of digits (1 digit/ sec.).
Subject has to repeat them in the forward order [ ] 2 1 8 5 4
Subject has to repeat them in the backward order [ ] 7 4 2
__/2

Read list of letters. The subject must tap with his hand 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

Serial 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 — 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

Fluency / Name maximum number of words in one minute that begin with the letter F [ ] _____ (N ≥ 11 words)
__/1

ABSTRACTION — Similarity between e.g. banana - orange = fruit [ ] train – bicycle [ ] watch - ruler
__/2

DELAYED RECALL

	Has to recall words WITH NO CUE	FACE [ ]	VELVET [ ]	CHURCH [ ]	DAISY [ ]	RED [ ]	Points for UNCUED recall only
Optional	Category cue						
	Multiple choice cue						

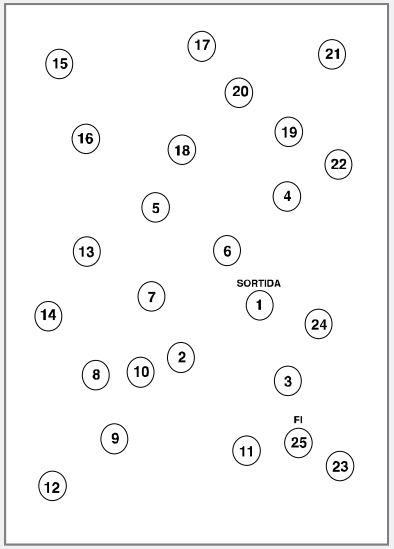
__/5

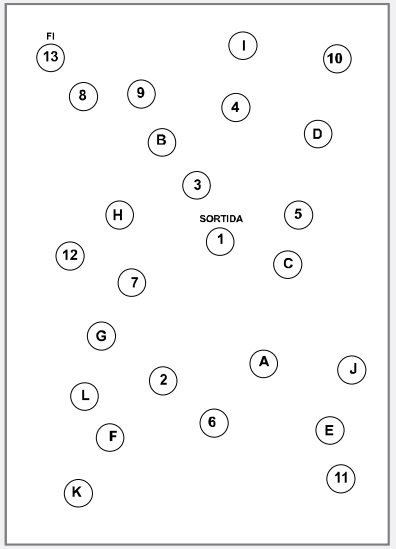
ORIENTATION [ ] Date [ ] Month [ ] Year [ ] Day [ ] Place [ ] City
__/6

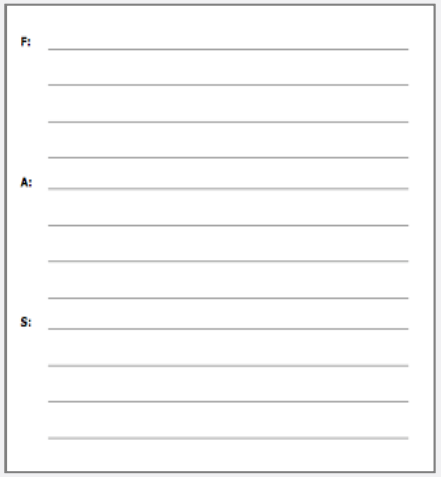
© Z.Nasreddine MD — www.mocatest.org — Normal ≥ 26 / 30

TOTAL __/30
Add 1 point if ≤ 12 yr edu

Administered by: _____







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Muñoz-Moreno / Barcelona / May 2018

1. Neurocognitive Impairment

☝ Aging

☝ Accuracy

MoCA
(Nasreddine et al, JAGS, 2005)

Hasbun et al, *J AIDS Clin Res, 2012*	Age 43: 85% - 40%
Overton et al, *J Neurovirol, 2013*	Age 43: 89% - 42%
Milanini et al, *JAIDS, 2014*	**Age >60: 72% - 67%**

NEU Screen
(Muñoz-Moreno et al, JAIDS, 2013)

Muñoz-Moreno et al, *JAIDS, 2013*	Age 44: 81% - 74%
Muñoz-Moreno et al, *CROI, 2014*	Age 43: 73% - 74%
Muñoz-Moreno et al, *submitted, 2018*	**Age >60: 91% - 92%**

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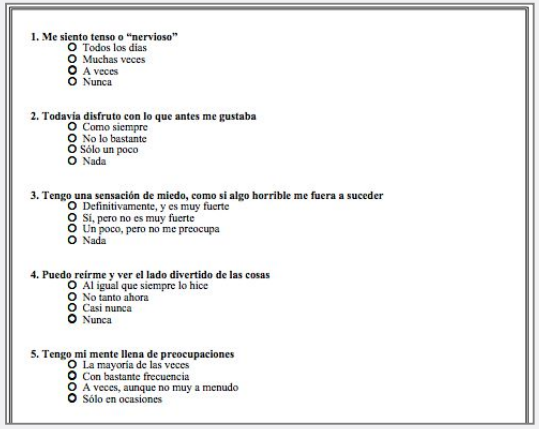
2. Neuropsychiatric Symptoms

HADS

Hospital Anxiety and Depression Scale (Zigmond et al, 1983)



1. Me siento tenso o "nervioso"
   - Todos los días
   - Muchas veces
   - A veces
   - Nunca

2. Todavía disfruto con lo que antes me gustaba
   - Como siempre
   - No lo bastante
   - Sólo un poco
   - Nada

3. Tengo una sensación de miedo, como si algo horrible me fuera a suceder
   - Definitivamente, y es muy fuerte
   - Sí, pero no es muy fuerte
   - Un poco, pero no me preocupa
   - Nada

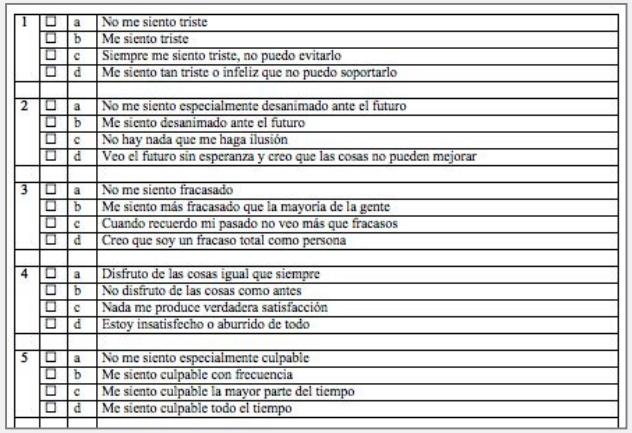
4. Puedo reírme y ver el lado divertido de las cosas
   - Al igual que siempre lo hice
   - No tanto ahora
   - Casi nunca
   - Nunca

5. Tengo mi mente llena de preocupaciones
   - La mayoría de las veces
   - Con bastante frecuencia
   - A veces, aunque no muy a menudo
   - Sólo en ocasiones

-> 14 items
-> 2 scales
-> 1 total scale

BDI-II

Beck Depression Inventory (Beck et al, 1996)

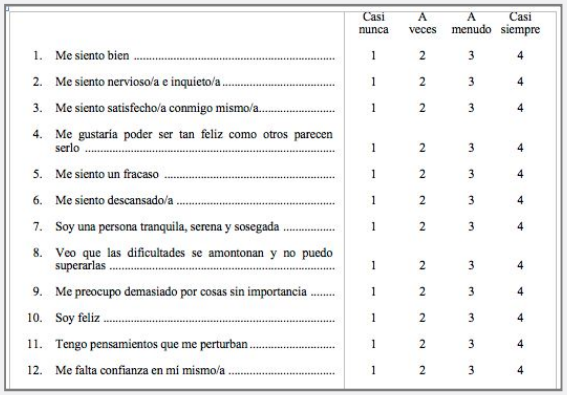


1	☐	a	No me siento triste
	☐	b	Me siento triste
	☐	c	Siempre me siento triste, no puedo evitarlo
	☐	d	Me siento tan triste o infeliz que no puedo soportarlo
2	☐	a	No me siento especialmente desanimado ante el futuro
	☐	b	Me siento desanimado ante el futuro
	☐	c	No hay nada que me haga ilusión
	☐	d	Veo el futuro sin esperanza y creo que las cosas no pueden mejorar
3	☐	a	No me siento fracasado
	☐	b	Me siento más fracasado que la mayoría de la gente
	☐	c	Cuando recuerdo mi pasado no veo más que fracasos
	☐	d	Creo que soy un fracaso total como persona
4	☐	a	Disfruto de las cosas igual que siempre
	☐	b	No disfruto de las cosas como antes
	☐	c	Nada me produce verdadera satisfacción
	☐	d	Estoy insatisfecho o aburrido de todo
5	☐	a	No me siento especialmente culpable
	☐	b	Me siento culpable con frecuencia
	☐	c	Me siento culpable la mayor parte del tiempo
	☐	d	Me siento culpable todo el tiempo

-> 21 items
-> 1 scale
-> 2 subscales

STAI

State-Trait Anxiety Inventory (Spielberger et al, 1983)



		Casi nunca	A veces	A menudo	Casi siempre
1.	Me siento bien	1	2	3	4
2.	Me siento nervioso/a e inquieto/a	1	2	3	4
3.	Me siento satisfecho/a conmigo mismo/a	1	2	3	4
4.	Me gustaría poder ser tan feliz como otros parecen serlo	1	2	3	4
5.	Me siento un fracaso	1	2	3	4
6.	Me siento descansado/a	1	2	3	4
7.	Soy una persona tranquila, serena y sosegada	1	2	3	4
8.	Veo que las dificultades se amontonan y no puedo superarlas	1	2	3	4
9.	Me preocupo demasiado por cosas sin importancia	1	2	3	4
10.	Soy feliz	1	2	3	4
11.	Tengo pensamientos que me perturban	1	2	3	4
12.	Me falta confianza en mí mismo/a	1	2	3	4

-> 20 items
-> 1 scale

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CONCLUSIONS

1. Both neurocognitive and neuropsychiatric screenings are essential in the establishment of a HAND.

2. There are available feasible and rapid tools for both type of screenings.

3. Accuracy of some of those tools can be fairly high, particularly for aging HIV population.

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