

# Assessing cognition after stroke

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Stroke Association

Lord Leonard and Lady Estelle Wolfson Foundation lecturer



# Why assess cognition?

Walking and talking

Learning new skills

Interpersonal relationships

Driving, kitchen safety

Progress in rehabilitation

Adapting to new situations

Managing personal finances

Going back to work

...

# Screening Cognition

**Stroke – specific cognitive problems?**

**(Post stroke) vascular dementia ?**

**Mild cognitive impairments?**

The picture in clinical practice can be quite muddled.

Which problems are new?

Which problems are stroke specific?

# Screening Cognition

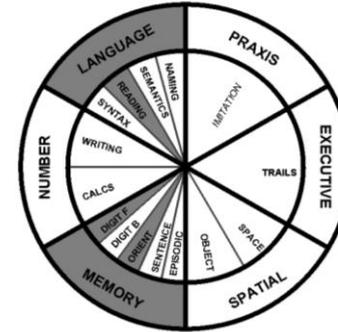
**Stroke – specific cognitive problems?**

(Post stroke) vascular dementia ?

Mild cognitive impairments?

# OVERVIEW - Stroke Specific

## OCS Oxford Cognitive Screen



OCS-BRIDGE



# Good Clinical Practice

NICE Guideline 162 (June 2013)

**NICE** National Institute for  
Health and Care Excellence

*“Perform a full medical assessment of the person with stroke, **including cognition (attention, memory, spatial awareness, apraxia, perception)**”*

# Actual Clinical Practice

No efficient purpose built tool for acute patients:

Long domain specific assessments not practical

Short screens exist, but were made for **dementia**:

MMSE

ACE-R / ACE-III

MOCA

They give a single score (e.g. 24/30)

# COGNITION

**PASS** / **FAIL**

# e.g. MoCA

However:

Dementia cognitive profile  
 $\neq$   
 Stroke cognitive profile

Still **Pass** / **Fail** cognition

Neglect contaminates tasks

Heavily language dependent

MONTREAL COGNITIVE ASSESSMENT (MOCA)  
 Version 7.1 [Original Version] ID: BL-P \_\_\_\_  
 Date: \_\_/\_\_/\_\_\_\_

VISUOSPATIAL / EXECUTIVE		Copy cube	Draw CLOCK (Ten past eleven) (3 points)			POINTS	
			[ ]	[ ]	[ ]	___/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	No points
		1st trial					
		2nd trial					
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 $\geq 2$ errors [ ] FBACMNAAJKLBFAFAKDEAAAJAMOF AAB					___/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 $\geq 11$ 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						
ORIENTATION	[ ] Date [ ] Month [ ] Year [ ] Day [ ] Place [ ] City					___/6	
© Z.Nasreddine MD		www.mocatest.org		Normal $\geq 26 / 30$		TOTAL	___/30
Administered by: _____						Add 1 point if $\leq 12$ yr edu	



**OCS**  
**Oxford Cognitive Screen**

Glyn Humphreys Nele Demeyere Jane Riddoch Elitsa Slavkova

Short cognitive screening tool

Stroke specific

Aphasia Friendly

Neglect Friendly

# OCS

## Oxford Cognitive Screen

5 cognitive domains

Language

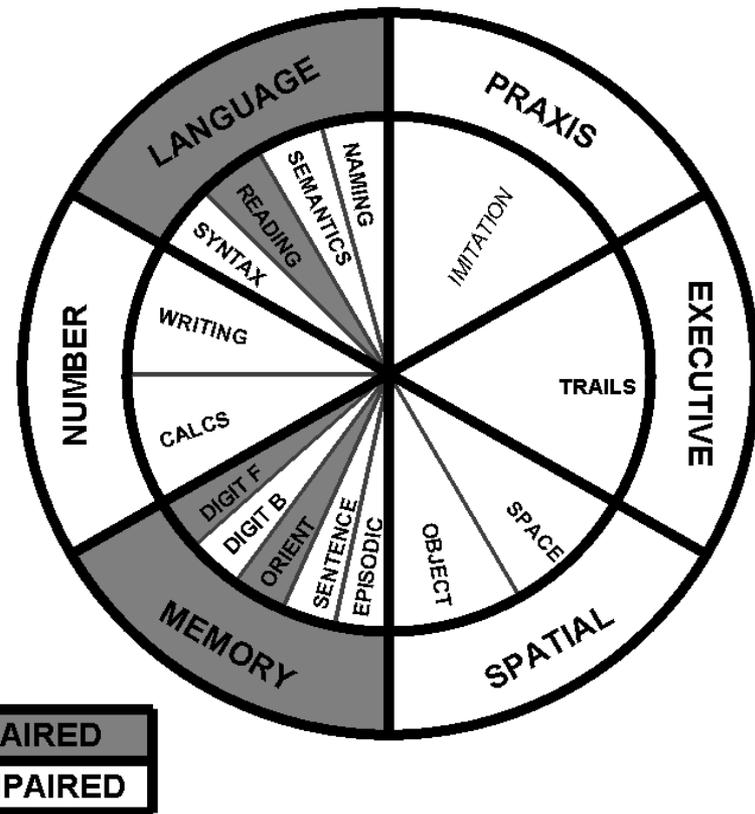
Attention

(spatial & executive)

Number

Memory

Praxis



# OCS vs MoCA conclusions

J Neurol

DOI 10.1007/s00415-015-7964-4



CrossMark

ORIGINAL COMMUNICATION

## Domain-specific versus generalized cognitive screening in acute stroke

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OCS **more sensitive** than MoCA

OCS assesses **stroke specific** impairments not assessed in MoCA

OCS **inclusive** for patients with **aphasia & neglect**

OCS provides a **domain overview** instead of PASS / FAIL cognition

# OCS in clinical practice

“ **OCS** fills a critical and necessary brief in assessing cognition after stroke (**NICE guidelines**)”

Demeyere et al., Psychological Assessment, 2015

**OCS** licensed to **209** stroke units.



# Detailed assessments

## Assessment of Attention



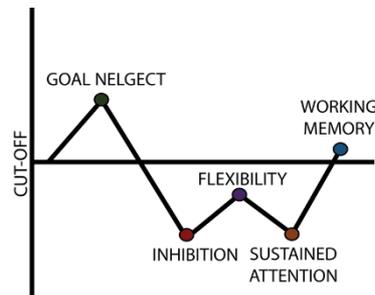
Individualised Diagnostics & Rehabilitation of Attention Disorders

### Executive Control

Attentional control mechanisms

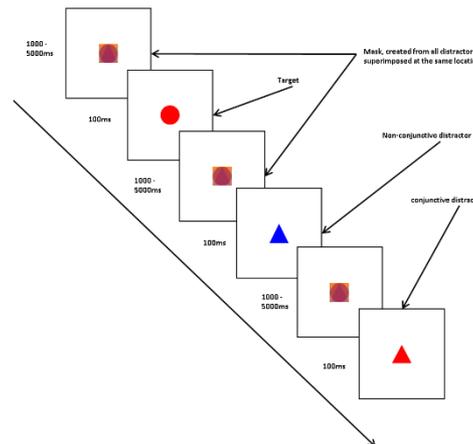


Rachel King



### Selective & sustained attention

Temporal dynamics and its behavioural correlates



Nir Shalev

# Assessing Cognition ?

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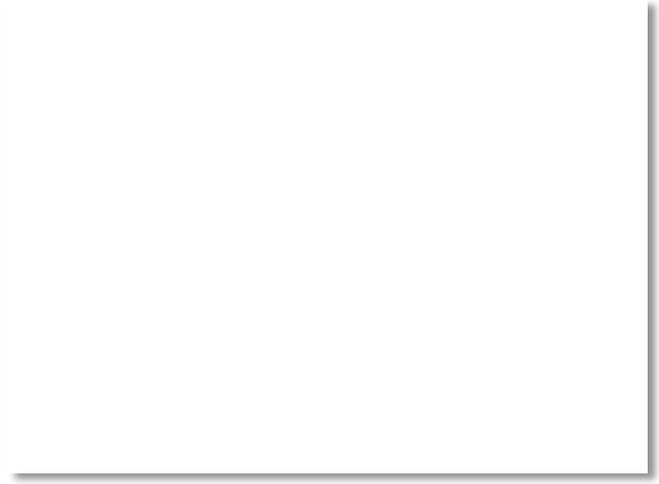
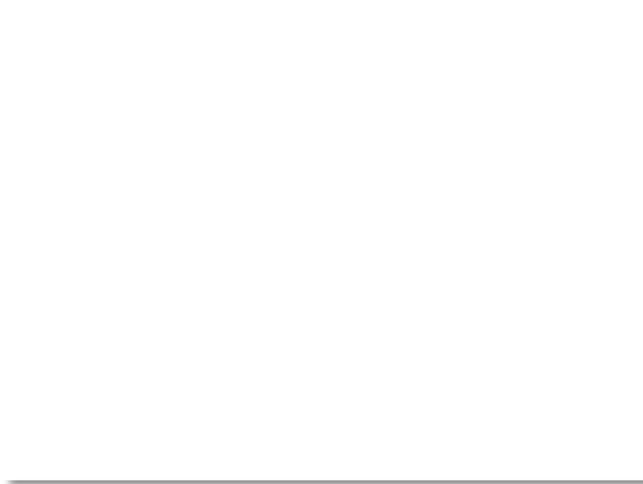
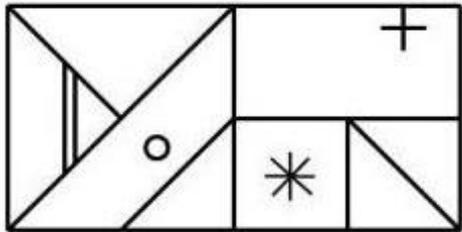
# Mild Cognitive Impairments



**OCSd**  
**Oxford Cognitive Screen**

Mihaela Duta Glyn Humphreys Nele Demeyere

Tablet based sensitive assessments for Mild Cognitive Impairments and Dementia (emphasis on process & strategy)



# Mental Capacity



Nele Demeyere



Mihaela Duta



Anders Jespersen



## Assessing Mental Capacity

Decision making ability after stroke within legal framework of the Mental Capacity Act

(e.g. capacity to decide discharge destination)

# Thank you!

