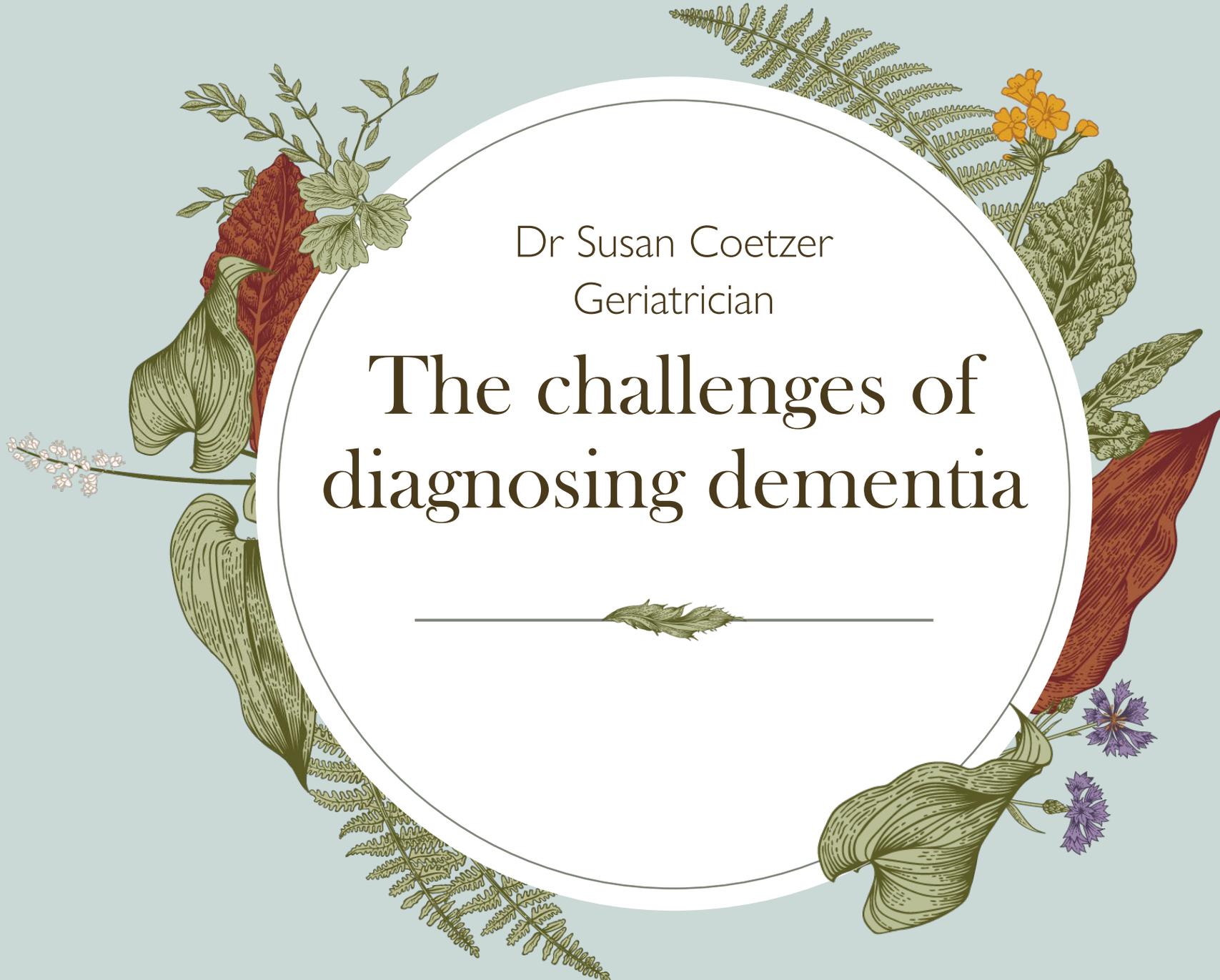


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ELSE

A circular wreath of various botanical illustrations surrounds the central text. The wreath includes green ferns, a red leaf, a green leaf with a white flower, a green leaf with a yellow flower, a green leaf with a purple flower, a green leaf with a pink flower, and a green leaf with a white flower.

Dr Susan Coetzer
Geriatrician

The challenges of diagnosing dementia



Agenda

Introduction

Types of dementia

How to examine

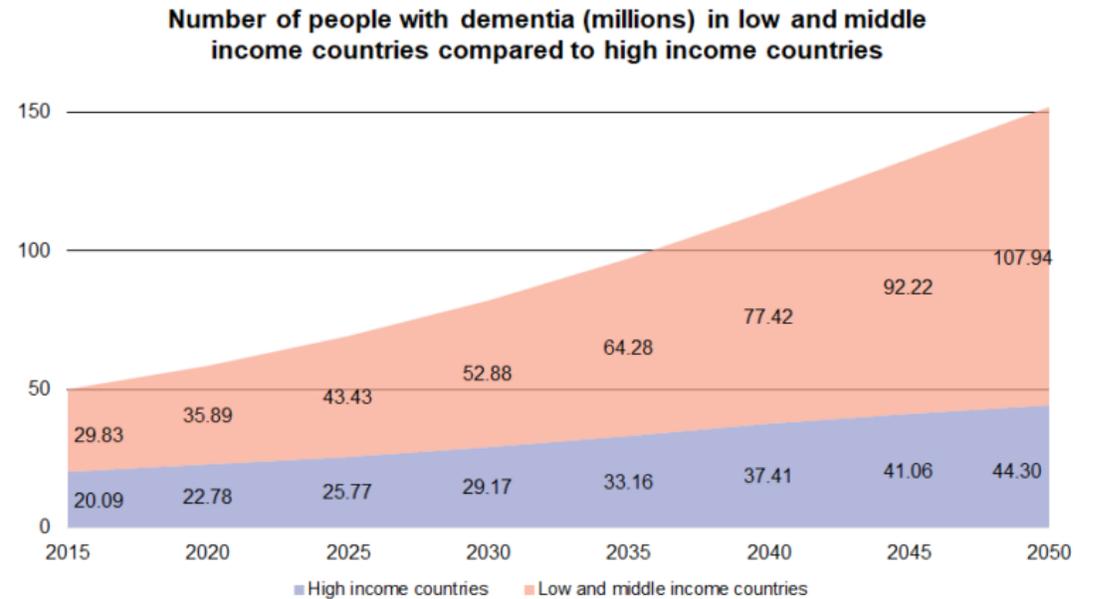
Why is it important

Summary

Introduction



- Dementia affects 5% of individuals over 65 yrs and 35-50% of individuals over the age of 85 yrs (1)
- 2013 – estimated 44.4 million people with dementia worldwide (to increase to 75.6 million in 2030)



Case Study

- Mr John
 - 68 year old gentleman
 - Presents with a history of just being extra forgetful nowadays
 - Recently retired and moved to Jhb from a quiet beach town to be close to his children
 - Always misplacing keys and wallet or just can't remember an actor's name
 - Mom had Alzheimer's at age 87 – he is worried.
- ?Dementia

Case study 2

- Mrs Daisy
 - 85 year old lady
 - Brought by her family – she has no complaints
 - Has lost her car in Clearwater parking lot and after searching for 1 hour, called the police, only to find it when her children came and said she actually drove a blue car and no longer the yellow car she had when she was 30.
- ?Dementia

What is dementia

- A. evidence of significant cognitive decline from a previous level of performance in one or more cognitive domains
 - Learning and memory
 - Language
 - Executive function
 - Complex attention *
 - Perceptual motor
 - Social cognition *
- B. The cognitive deficits interfere with independence in everyday activities.
- C. The cognitive deficits do not occur exclusively in the context of delirium
- D. The cognitive deficits are not better explained by another mental disorder (eg major depressive disorder, schizophrenia)

DEMENTIA

Umbrella term for loss of memory and other thinking abilities severe enough to interfere with daily life.

Alzheimer's:
60-80%

**Lewy Body
Dementia:**
5-10%

**Vascular
Dementia:**
5-10%

**Frontotemporal
Dementia:**
5-10%

**Others:
Parkinson's,
Huntington's**

**Mixed dementia:
Dementia from more than one cause**

Mild Cognitive Impairment



- Does not meet the criteria for dementia (usually has memory concerns but not enough to cause functional loss)
- 1/3 – progresses to dementia
- 1/3 – remains stable
- 1/3 – improves to normal cognition again

“Pseudo-dementia” – can occur with dementia



Delirium

Acute/subacute onset

Prominent deficits in attention and difficulty maintaining attention

Fluctuation in level of consciousness



Dementia of depression

Slowing down

Poor effort on testing

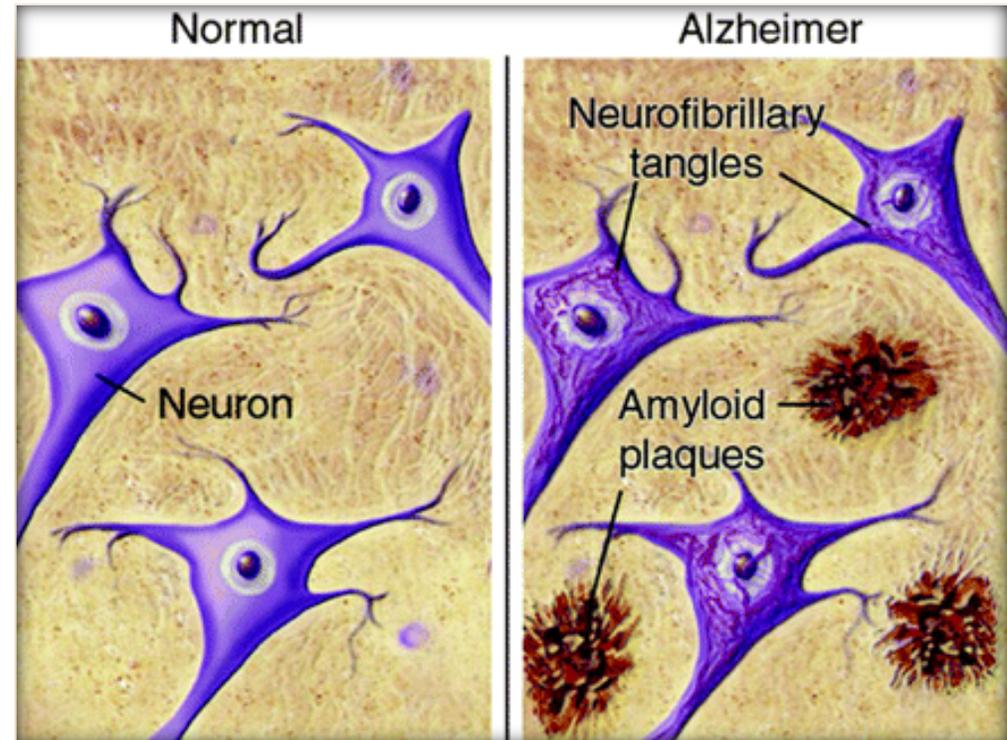


Pharmacology esp psychiatric meds

Alzheimer's disease

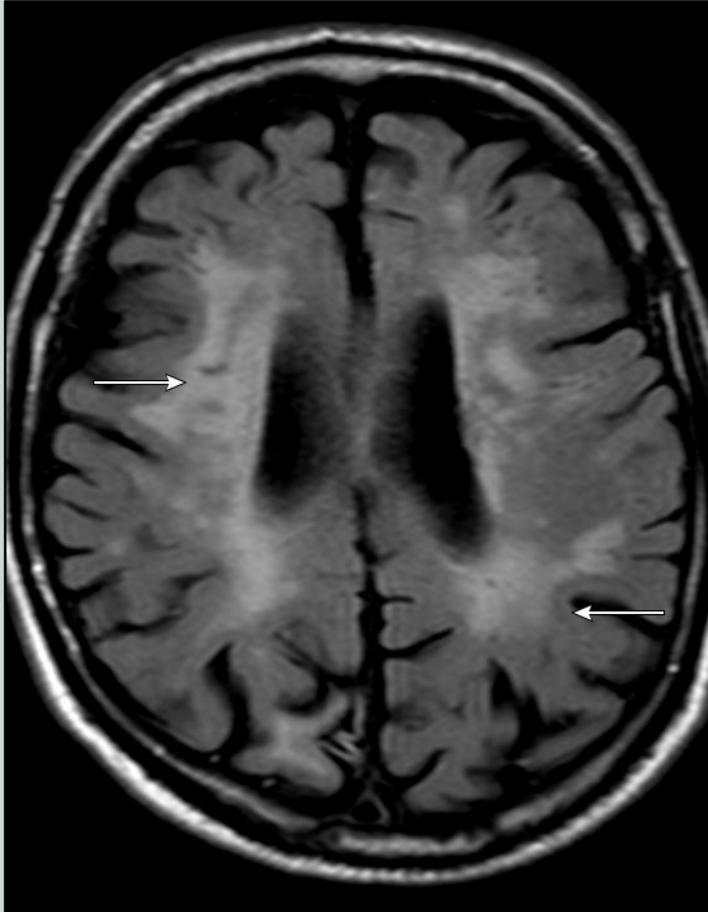


- Most common
- Hereditary usually early onset (<65 yrs)
- Neuropathologic change: diffuse, neuritic plaques with extracellular amyloid beta deposition and neurofibrillary tangles (intracellular accumulation of tau-protein)



Alzheimer's - main clinical features

- Memory and learning impairment (early)
- With/without executive impairment and apraxia
- Visuospatial impairment at moderate level
- Varies: behavioural and psychologic symptoms (depression early, apathy then more behavioural)
- Language impairment only later
- Other: sleep disturbances, seizures, olfactory impairment



Vascular dementia

- After a known event eg stroke but can also occur without obvious “events”
- Subcortical disease – need to find the cause
- Synonyms: SCIVD (subcortical ischemic vascular dementia), Binswanger disease

Vascular dementia – main clinical features

- Prominent executive and processing speed impairment
- Can have memory impairment but usually better learning and recall (especially on cueing)
- Gait disturbances
- Parkinsonisms
- Impaired social cognition and behavioural disturbances common
- Urinary frequency

Lewy Body Dementia



- Early presenting feature is often hallucinations
- With or without Parkinson's features
- Often autonomic features
- Early visuospatial and executive impairment
- Later memory impairment
- ANTIPSYCHOTICS = POTENTIALLY DEADLY



Robin Williams
1951 – 2014

We are deeply saddened by the passing of Robin Williams. He inspired us through his passion, his generosity, and the gift of laughter. He will be greatly missed.

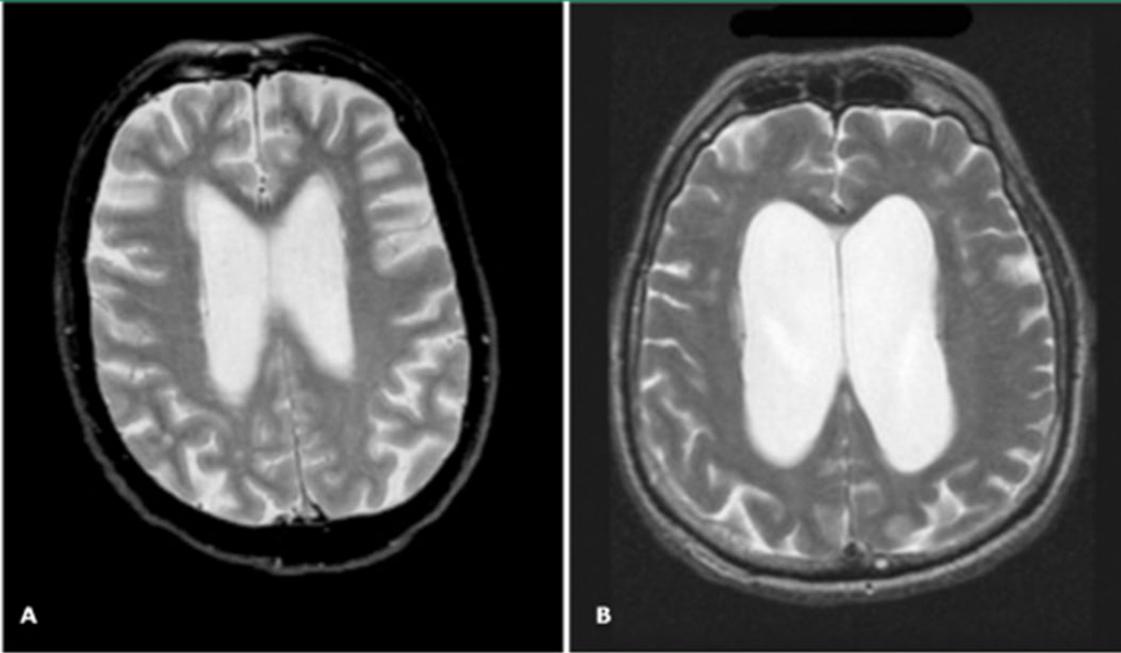
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Frontotemporal Dementia (Pick's Disease)



- Behavioural variant
 - Younger people
 - Often autosomal dominant heritable
 - Associated with motor neuron disease
 - Prominent changes in social behaviour and personality (loss of empathy, apathy, hyperorality, compulsive behaviour)
- Language variant (primary progressive aphasia – nonfluent and semantic)
 - Motor functions and executive functions often remain intact until late

MRI ventriculomegaly atrophy versus NPH



(A) Axial T2-weighted image at level of lateral ventricles in a patient with Alzheimer disease demonstrates increased size of the ventricular system in proportion to sulcal dilatation, consistent with brain parenchymal volume loss.
(B) Axial T2-weighted image at level of lateral ventricles in a patient with NPH shows ventricular dilatation out of proportion to the sulci.

MRI: magnetic resonance imaging; NPH: normal pressure hydrocephalus.

UpToDa

Other types of dementia

- Normal pressure hydrocephalus
 - “wet, wobbly, wacky”

Other dementias

- Parkinson's disease related
- HIV related
- Prion disease (myoclonic jerks, rapid progression)
- Wilson's disease, Huntington's disease



How do I evaluate a patient for dementia





Combination of 4 parts...

History

Cognitive examination

Physical examination

Special investigations

History – “his (and the family’s) story”



- Decline in functional status and period of time this has occurred
- Risk factors for dementia...



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Risk Factors



- Age
- Genetics
- Smoking
- Alcohol
- Diabetes mellitus
- Hypertension
- High cholesterol



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- Obesity
- Lack of physical activity
- Lower education level
- Social isolation
- Hearing loss
- Depression



Cognitive assessment

- Folstein's Mini-Mental examination (MMSE) with clock drawing
- Montreal Cognitive Assessment
- Mini-Cog
- Other – visual association; Addenbrooke's etc

Mini-Mental State examination

Years of schooling:

Able to read:

Able to hear: ↓

1. Orientation to time

- a. What is the year 2020
- b. What is the season ✓
- c. What is this month ✓
- d. What is the date X
- e. What day of the week is it Mon (6)

2. Orientation to place

- a. In which country are we ✓
- b. In which province are we TVL ✓
- c. In which town or city are we ✓
- d. In which hospital are we X
- e. Which floor are we on ✓

3. Pen; apple; table (3)

4. Function

- a. Serial sevens 93 87 - (5)
- b. World backwards D L R O V

5. Repeat pen apple table (1)

6. Name pen and watch (2)

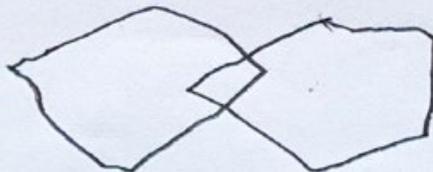
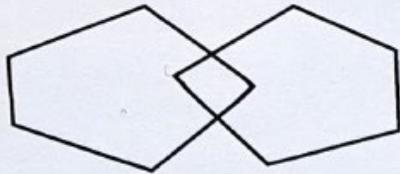
* 7. No ifs and or buts

8. Command: take this paper in your right hand, fold the paper in half a

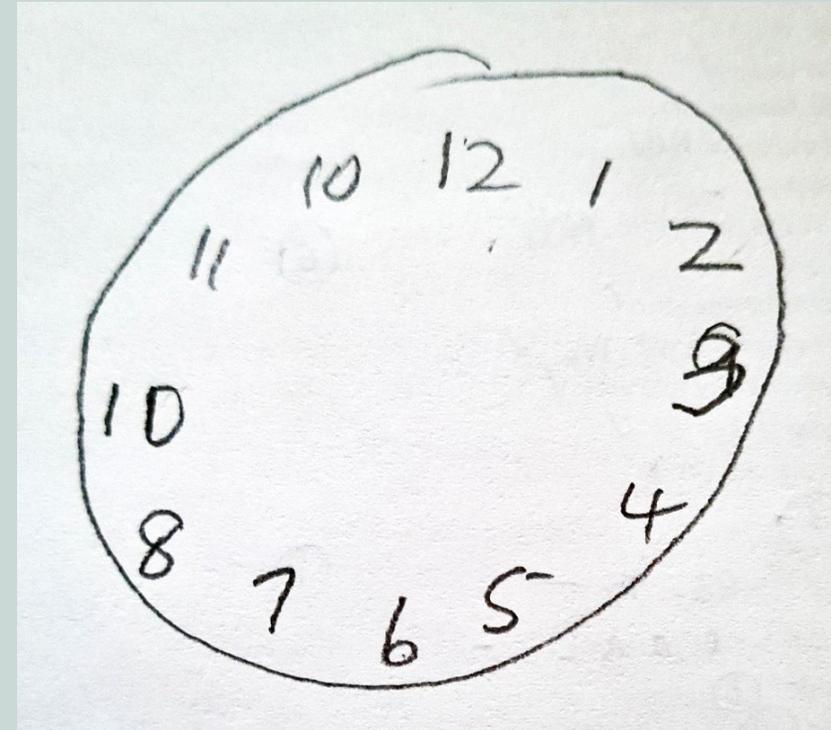
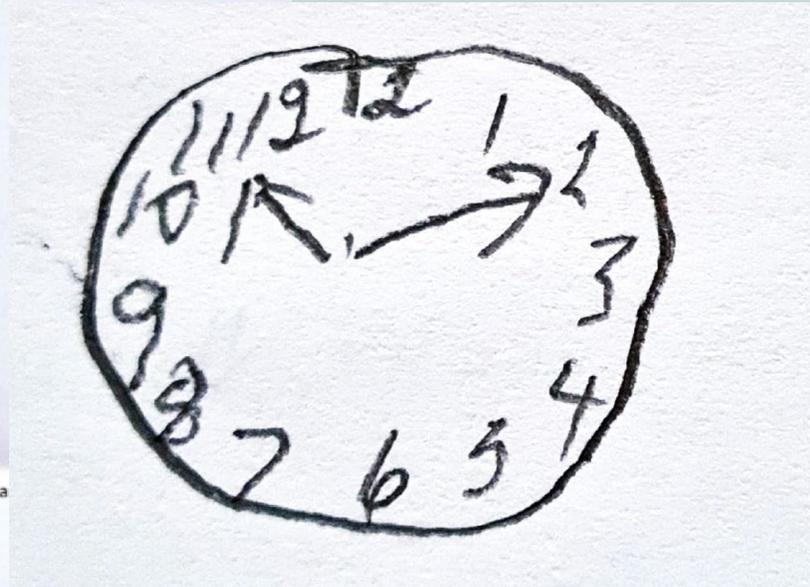
9. Own sentence

10. CLOSE YOUR EYES (1)

11. copy this



22/30





MoCA



MONTREAL COGNITIVE ASSESSMENT (MOCA)
Version 7.1 Original Version

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

VISUOSPATIAL / EXECUTIVE		Copy cube	Draw CLOCK (Ten past eleven) (3 points)	POINTS				
				<input type="checkbox"/> * <input type="checkbox"/> * <input type="checkbox"/> * <u>2/5</u>				
NAMING								
				<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <u>3/3</u>				
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		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
2nd trial		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
ATTENTION		Read list of digits (1 digit/ sec.). Subject has to repeat them in the forward order. <input checked="" type="checkbox"/> 2 1 8 5 4 Subject has to repeat them in the backward order. <input checked="" type="checkbox"/> 7 4 2			<u>2/2</u>			
Read list of letters. The subject must tap with his hand at each letter A. No points if ≥ 2 errors.		<input type="checkbox"/> FBACMNAAJKLBAFAKDEAAAJAMOF AAB			<u>1/1</u>			
Serial 7 subtraction starting at 100		<input checked="" type="checkbox"/> 93	<input checked="" type="checkbox"/> 86	<input checked="" type="checkbox"/> 79	<input checked="" type="checkbox"/> 72	<input checked="" type="checkbox"/> 65	4 or 5 correct subtractions: 3 pts , 2 or 3 correct: 2 pts , 1 correct: 1 pt , 0 correct: 0 pt	<u>3/3</u>
LANGUAGE		Repeat: I only know that John is the one to help today. <input checked="" type="checkbox"/> The cat always hid under the couch when dogs were in the room. <input checked="" type="checkbox"/>			<u>2/2</u>			
Fluency / Name maximum number of words in one minute that begin with the letter F		<input type="checkbox"/> 11 (N ≥ 11 words)			<u>1/1</u>			
ABSTRACTION		Similarity between e.g. banana - orange = fruit <input checked="" type="checkbox"/> train - bicycle <input checked="" type="checkbox"/> watch - ruler			<u>2/2</u>			
DELAYED RECALL		Has to recall words WITH NO CUE	FACE	VELVET	CHURCH	DAISY	RED	Points for UNCUED recall only
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Optional		Category cue	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Act	rose	<input checked="" type="checkbox"/>	
		Multiple choice cue	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ORIENTATION		<input checked="" type="checkbox"/> Date	<input checked="" type="checkbox"/> Month	<input checked="" type="checkbox"/> Year	<input checked="" type="checkbox"/> Day	<input checked="" type="checkbox"/> Place	<input checked="" type="checkbox"/> City	<u>6/6</u>
© Z.Nasreddine MD www.mocatest.org		Normal ≥ 26 / 30			TOTAL		<u>22/30</u>	
Administered by: _____		Add 1 point if ≤ 12 yr edu						



Physical examination

General health (and self care)

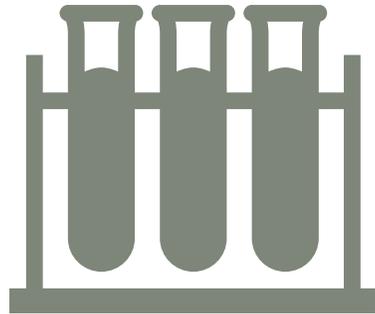
Cardiovascular examination

Neurological examination

Risk of falling / balance



Special examinations



Laboratory tests



Neuro-imaging

Other examinations



- EEG
- Lumbar puncture
- Amyloid PET
- SPECT
- Genetic



Why is the diagnosis important?



- Look for reversible / partially reversible causes
 - Eg normal pressure hydrocephalus, vit B12 deficiency
- Potential treatments
 - Alzheimer's specific drugs
 - Vascular risk modification
 - Potential risks of drugs often used for dementia
 - Eg antipsychotics in Lewy Body dementia can cause death
- Potential policy payout or assisting in curatorship / administratorship



Summary

Dementia is difficult to diagnose early in some cases but it is important

To have a formal diagnosis

Exclude reversible causes

Ensure the safety of the patient

Medication and potential therapies





Thank you



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