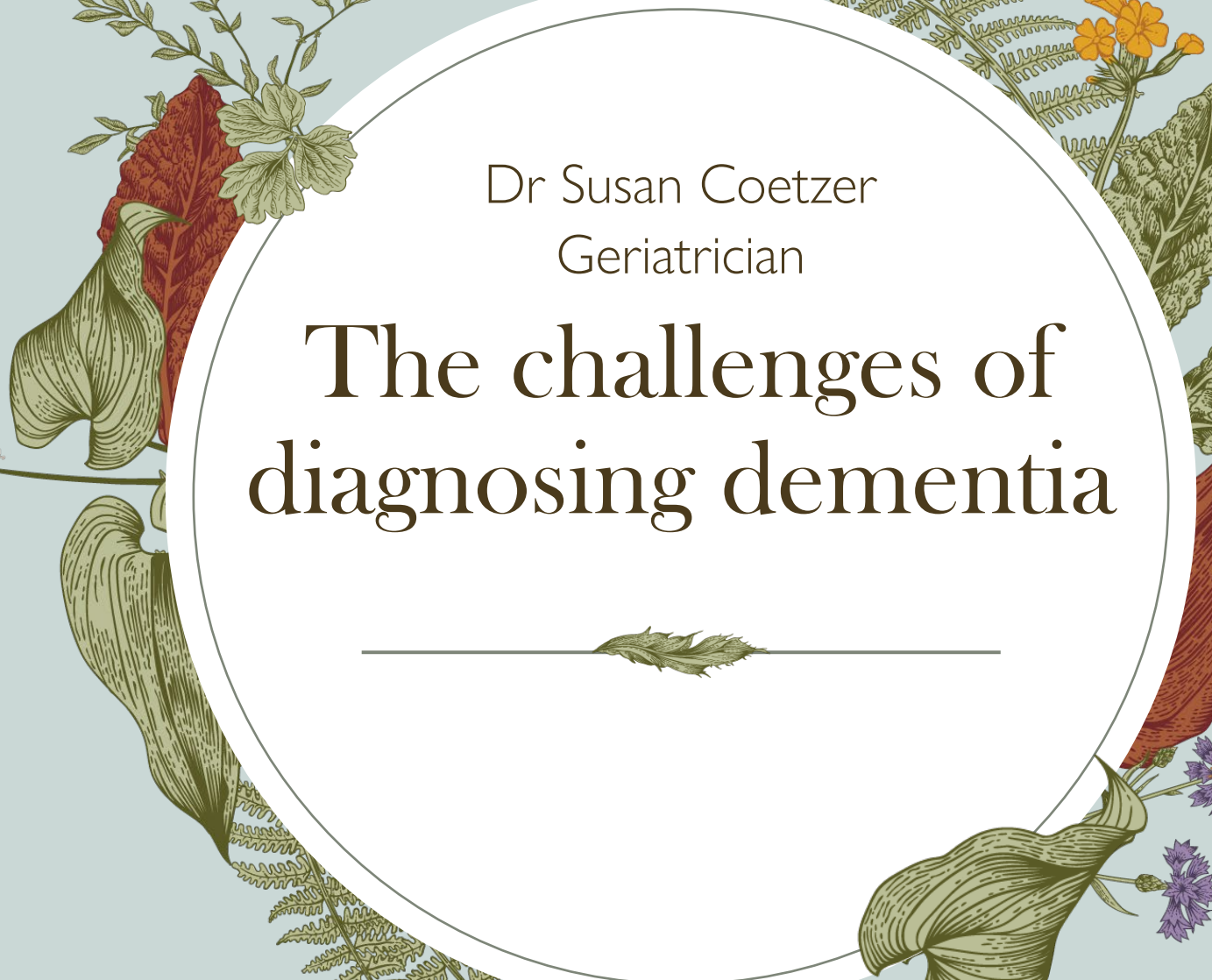
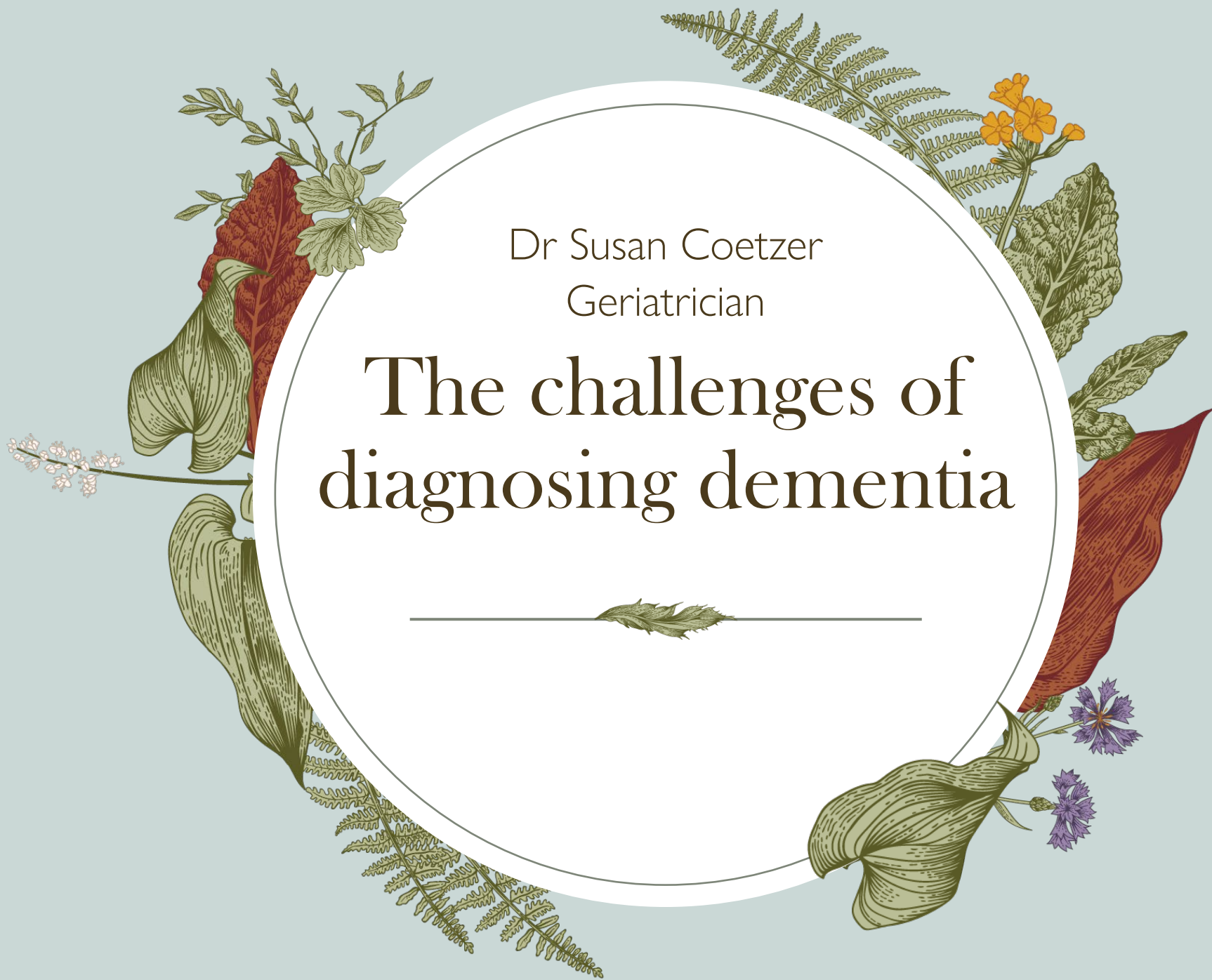


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Dr Susan Coetzer
Geriatrician

The challenges of diagnosing dementia



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Agenda

Introduction

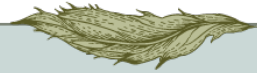
Types of dementia

How to examine

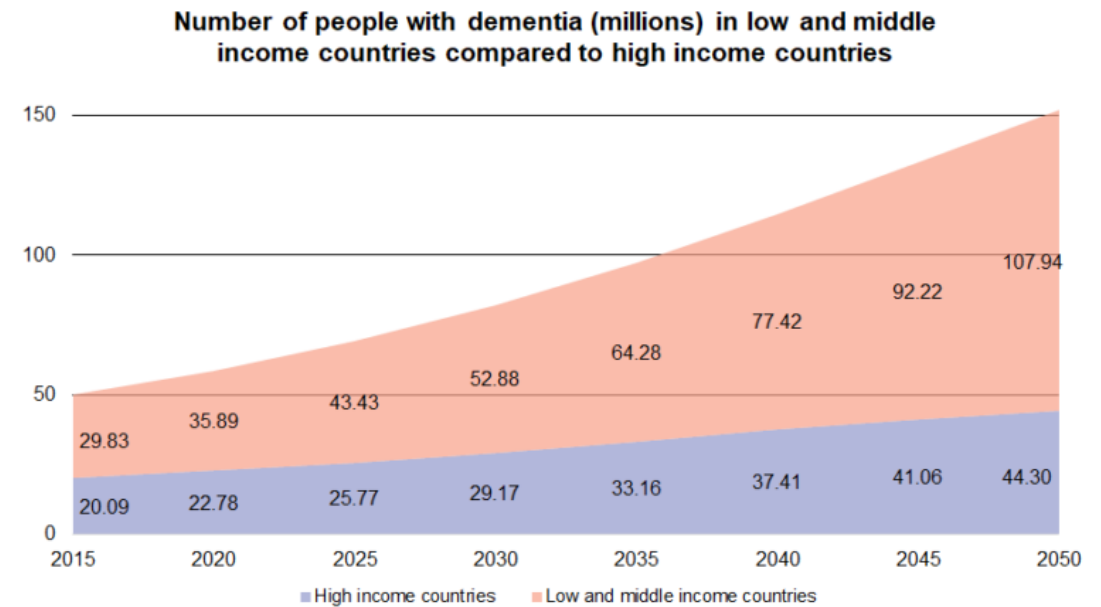
Why is it important

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

An infographic illustrating the concept of dementia. At the top, a large purple umbrella contains the word 'DEMENTIA' in white capital letters. Below the umbrella, a text box explains that dementia is an umbrella term for memory and thinking loss. Five teal raindrops of varying sizes represent different types of dementia, with their prevalence percentages. A teal puddle at the bottom represents mixed dementia. A vertical purple line connects the umbrella to the raindrops.

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

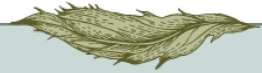
Slowing down

Poor effort on testing

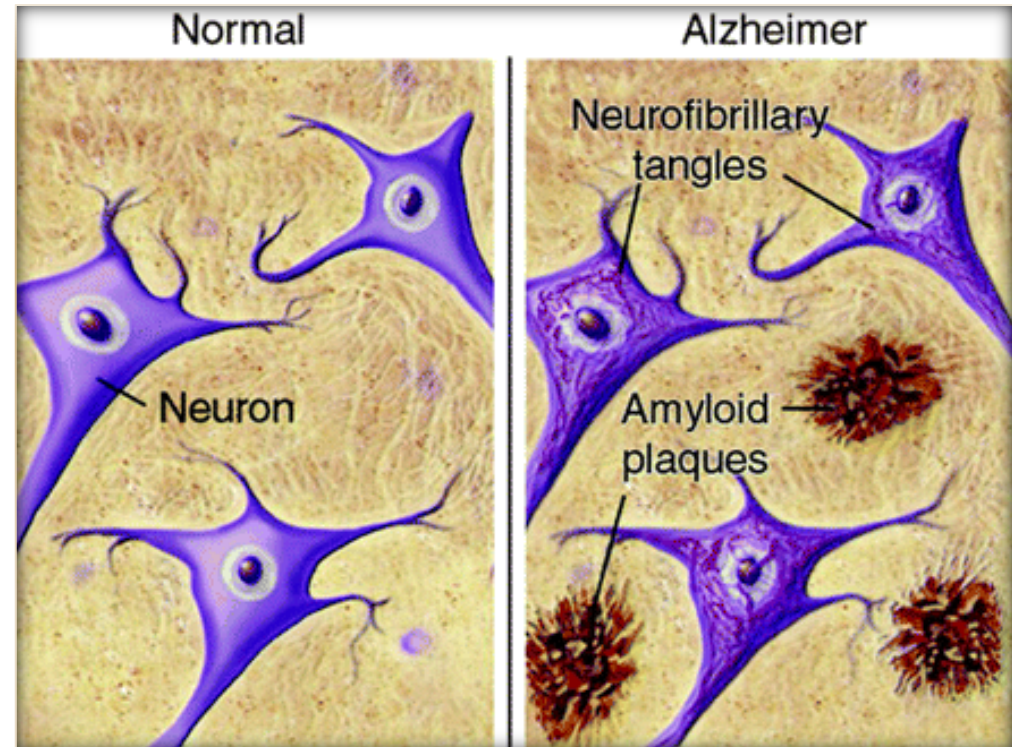


Pharmacology esp psychiatric meds

Alzheimer's disease

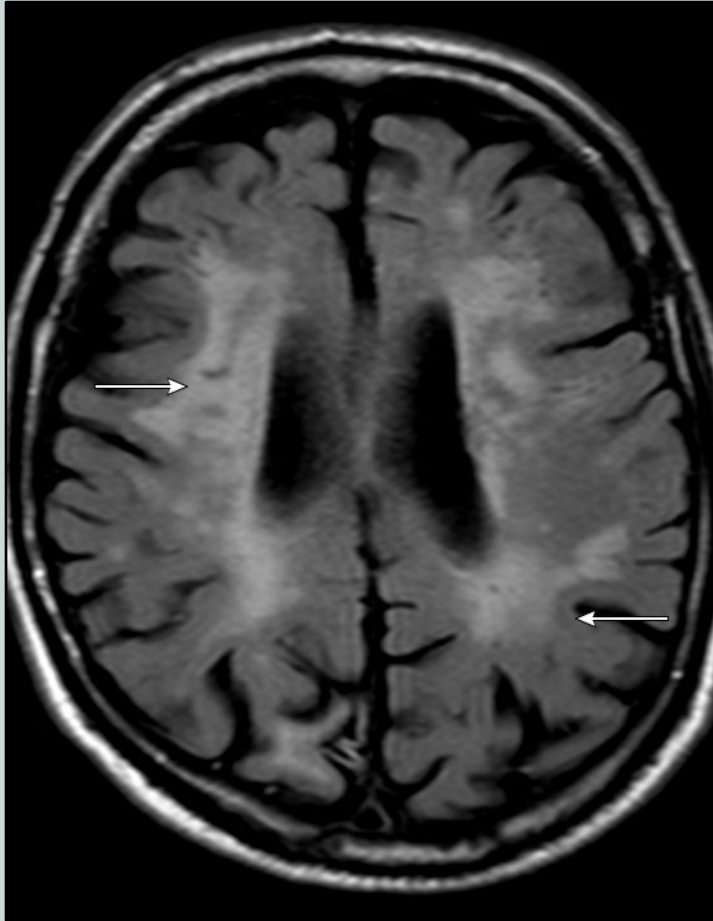


- Most common
- Hereditary usually early onset (<65 yrs)
- Neuropathologic change: diffuse, neuritic plaques with extracellular amyloid beta deposition and neurofibrillary tangles (intracellular accumulation of tau-protein)



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.

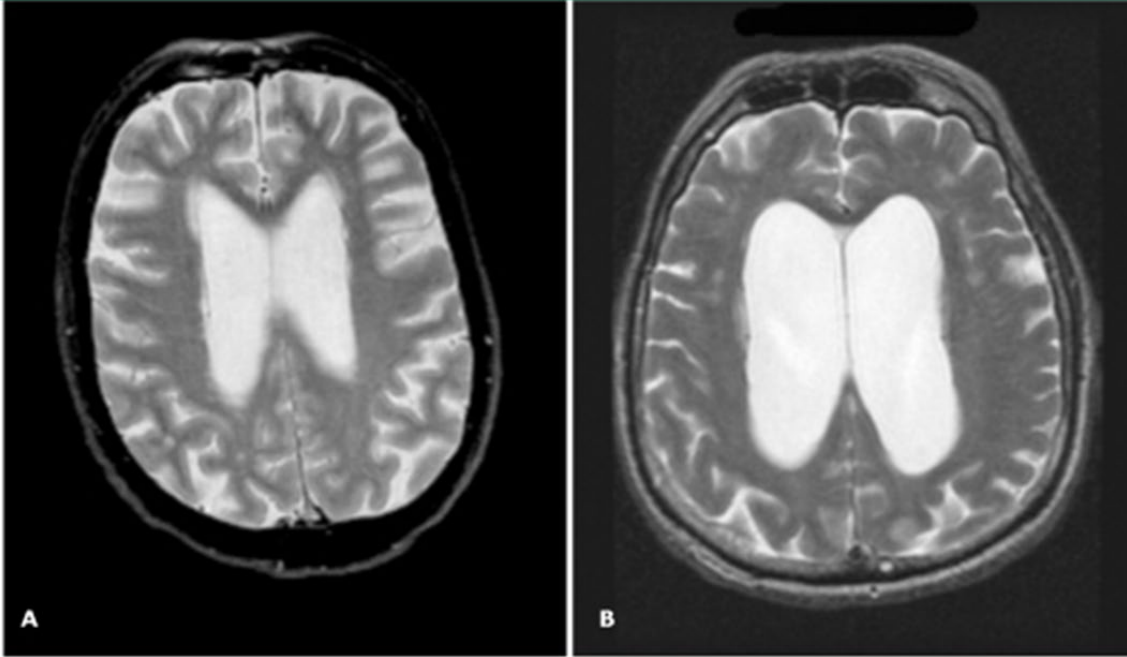
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Frontotemporal Dementia (Pick's Disease)



- 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.

UpToData

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

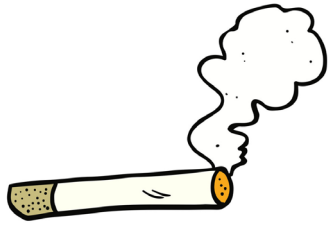
Physical examination

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

- What is the year 2020
- What is the season ✓
- What is this month? ✓
- What is the date X
- What day of the week is it Mon (6)

2. Orientation to place

- In which country are we ✓
- In which province are we TVL ✓
- In which town or city are we ✓
- In which hospital are we X
- Which floor are we on ✓

3. Pen; apple; table (3)

4. Function

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

5. Repeat pen apple table (1)

6. Name pen and watch (2)

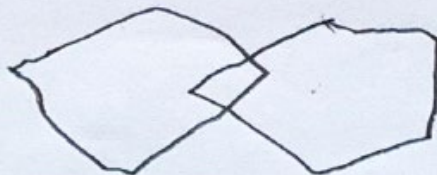
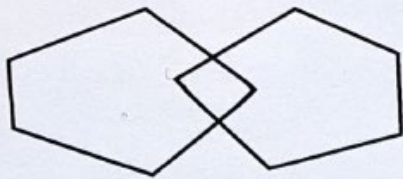
* 7. No ifs and or buts

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

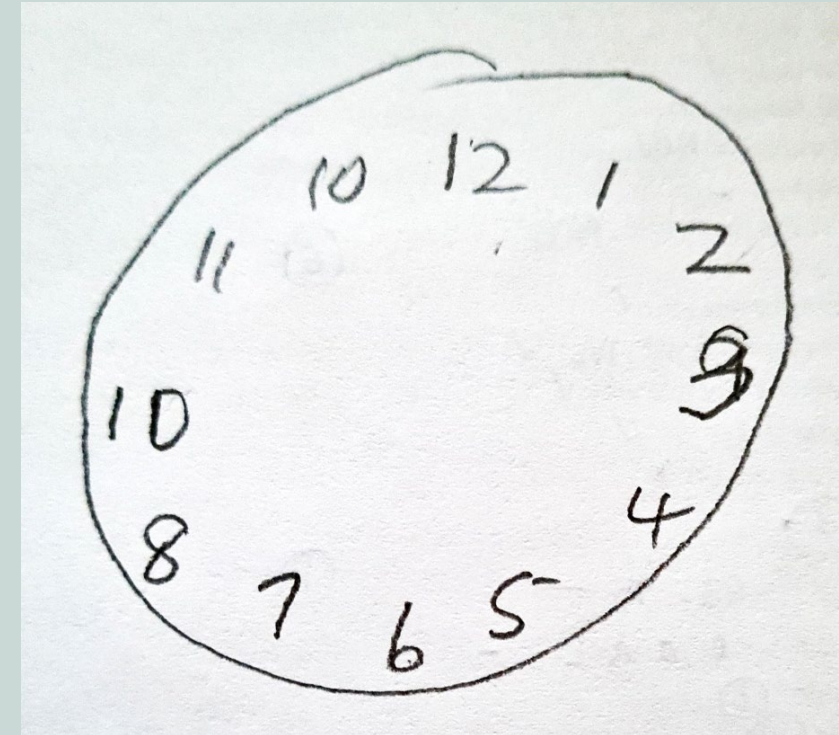
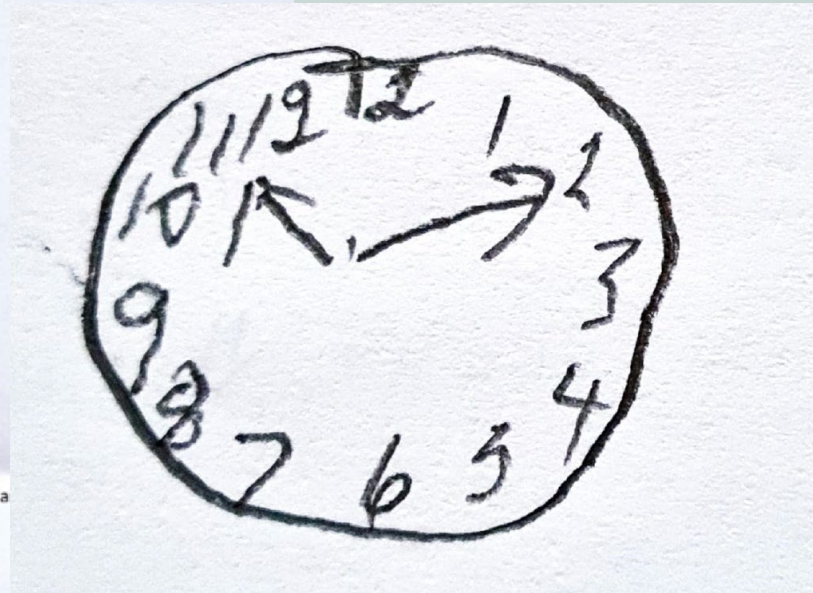
9. Own sentence

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 [x] [x]

Draw CLOCK (Ten past eleven) (3 points) [✓] Contour [✓] Numbers [x] Hands [x] 2/5

NAMING

[] [] [] 3/3

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 2/2

Read list of letters. The subject must tap with his hand at each letter A. No points if ≥ 2 errors [] FBACMNAAJKLBAFAKDEAAAJAMOF AAB 1/1

Serial 7 subtraction starting at 100 [x] 93 [x] 86 [x] 79 [x] 72 [x] 65 3/3
4 or 5 correct subtractions: 3 pts, 2 or 3 correct: 2 pts, 1 correct: 1 pt, 0 correct: 0 pt

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 F [] 11 (N ≥ 11 words) 1/1

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

DELAYED RECALL

	FACE	VELVET	CHURCH	DAISY	RED
Has to recall words WITH NO CUE	[x]	[x]	[]	[]	[]
Category cue	✓	-	Act	rose	✓
Multiple choice cue		✓	-	-	

Points for UNCUE recall only 0/5

Optional

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

© Z.Nasreddine MD www.mocatest.org Normal ≥ 26 / 30 TOTAL 22/30
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

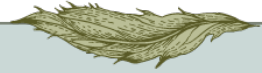


Laboratory tests



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



Susan Coetzer

susan@drsusan.co.za

www.drsusan.co.za