DEMENTIA DIAGNOSIS

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WHY DOES IT MATTER?

- Make an accurate diagnosis, and manage appropriately
- Allows dementia patient and carers to better deal with the disease, improve quality of life and make informed choices about care e.g. LPoA, Testamentary Capacity, Advance Directives
- Evidence that the introduction of effective dementia services are cost effective in the long term
- Delay and prevent unnecessary admissions into care homes. Care home placement of people with dementia costs the UK £7 billion per year and early provision of support can decrease institutionalisation by 22%

HOW CAN MEMORY DIFFICULTIES PRESENT?

I think there's something wrong with my memory

I think Mum/Dad's memory isn't too good – is it dementia?

There's nothing wrong with me, but I'm coming to please my daughter

She's accusing the neighbours of stealing her face cream

The neighbours have complained about the state of the property

He went to visit his son and ended up in a field….. etc.etc.

WHAT ARE THE CLUES TO LISTEN OR LOOK OUT FOR?

Are there any hints that this might be a dementia or can the symptoms be explained by something else - normal ageing, depression, Parkinson's disease, delirium, alcohol, metabolic syndromes etc etc?

If you think there is a dementia, then what type is it?

TYPES

Alzheimers Disease - > 50%

Lewy body dementia - ? 20%

Parkinsons Disease dementia

Vascular dementia – 20%

Alcohol induced dementia – 10%

“reversible dementias” – 5%

- Tumours
- Normal pressure hydrocephalus
- Post traumatic
- Limbic encephalitis
- Metabolic

Pseudodementia – 5%

Fronto-temporal dementias– 3% - behavioural, semantic, PNFA

AIDS related dementia

Huntingtons Disease

Syphilis – GPI

CJD/nvCJD

Encephalopathic – Hashimoto’s encephalopathy, valproate encephalopathy

Etc.Etc.

HOW DO I TELL THE DIFFERENCE?

Some guidance that may point you in the direction of one dementia or another

BUT, you often get a mixed picture

DON'T PANIC!

Exclude other reasons for memory loss

- History, examination, investigations including scanning

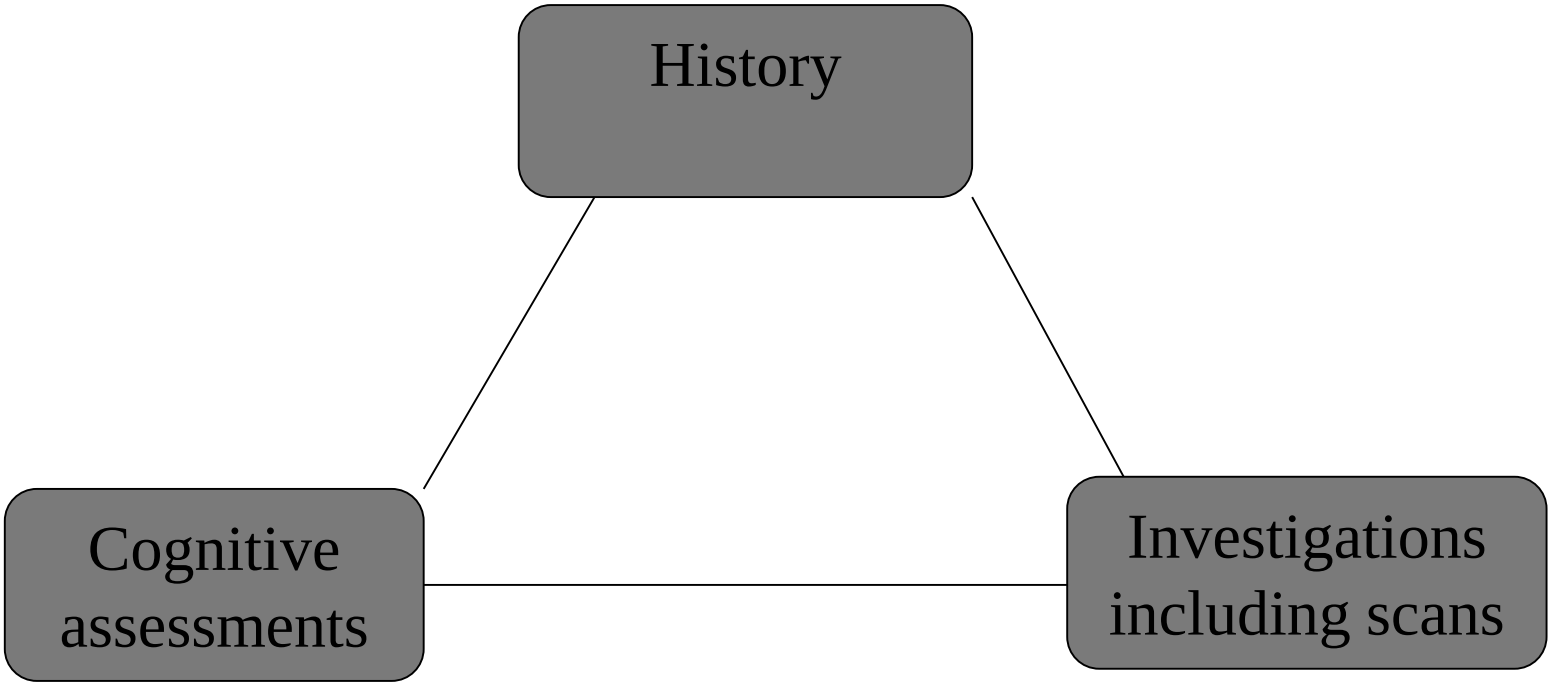
Decide if the dementia is affecting the front or back of the brain or both

- History, cognitive testing, scans

Start appropriate treatment

Refer if you think the picture is unusual

MAKING THE DIAGNOSIS



HISTORY

Onset and course - insidious, sudden, gently progressive, stepwise, acute deteriorations

What problems is it causing?

Is it affecting daily functioning? If so, how? - must have some deterioration in function for a diagnosis of dementia, otherwise MCI

Has behaviour changed? If so, how?

Any other symptoms – hallucinations, misrecognition, psychotic symptoms, change in gait or mobility, aggression, appetite, speech, change in personality, change in handwriting etc?

What are the risks – driving, getting lost, aggression, cooking etc?

WHEN YOU'RE IN FRONT OF THE PATIENT

- ?Acute confusional state – fluctuating conscious level, systemically unwell, hallucinating
- Are they, or their carers, vulnerable to elder abuse?
- Full history
- Mental state examination
- Cognitive assessment
- Physical assessment – pulse, BP, gait, Parkinsonism?
- Investigations – scans (at least a CT scan), bloods (FBC, U&E, LFTs, B12 and folate, Calcium, glucose, TFTs)
- Take your time

HISTORY

NORMAL PSYCHIATRIC HISTORY

ADDED EXTRA IN ANY OLDER PERSON COMPLAINING OF MEMORY DIFFICULTIES, ASK ABOUT:

- onset – sudden or gradual
- how long
- associated with physical illness?
- progression
- STM or LTM
- What is particularly problematic for them? And their family? – repetition, apathy, aggression etc etc
- Any misrecognition
- Getting lost? At home? When out?
- Wandering – where do they go? How have they got back?
- Continence
- Mobility/falls
- Getting dressed
- Self care – washing/shaving
- Making meals – safe/fire risk
- Smoking
- Driving
- Managing money – lasting power of attorney?, Court of Protection?, Testamentary Capacity?
- Shopping
- Aggression/irritability
- Remembering to take medication

AS WELL AS EVERYTHING ELSE

COGNITIVE ASSESSMENT

Conscious level – alert, fluctuating,

Validated cognitive assessment (lots available)– don't just focus on the score, try to get a sense about how the person approached the task, put it in the context of their premorbid ability

Frontal lobe battery – may be part of the test or done separately

General knowledge – how aware are they of history, current events, what's happening in Emmerdale?

Autobiographical knowledge - ?confabulates, ?aware of important dates – marriage, date of birth, children's names

CASE HISTORY A

75 year old retired man

Family report him as becoming more forgetful over the last 3 years – insidious decline, can't retain any new information, repetitive, LTM less affected but can't always remember how many children he has

Unaware of his deficits, and seems quite happy with how things are

Recent difficulty with cooking, gardening, managing money and family have gradually had to support him more with this

Speech rather superficial and empty with some word finding difficulties

Preserved social skills but more apathetic and irritable

No change in personality, mobility or handwriting.

ALZHEIMER'S DISEASE

- Alzheimer's disease is the most common form of dementia
- Approximately 700,000 people in the UK have dementia. Estimated to increase to 1.4 million by 2038
- Cost of looking after people with dementia is going up; currently £17bn, over £50bn by 2038
- Estimated that at least 15 million people are affected worldwide

ALZHEIMERS DISEASE

Try to get a history of the rate of decline – it gives you a big clue as to the diagnosis

Alzheimers tend to gradually decline without any real plateaus when things seem to stabilise (BUT NOT ALWAYS). It tends to come on gradually too (but families may only notice this with the benefit of hindsight once the disease is already advanced)

SYMPTOMS

- **Early**
  - **Impaired attention and concentration**
  - **Memory impairment**
  - **Anxiety**
  - **Depression or apathy**
  - **Exaggeration of personality traits**
  - **Lability of mood**
  - **Difficulties word finding**
  - **Perseveration of words and phrases**
  - **Unusual incidents raising concern**
- **Intermediate**
  - **Continued deterioration**
  - **Neurological abnormalities – 5-10% develop epilepsy**
  - **Apraxias and agnosias**
  - **Disorientation to time and space**
  - **Getting lost in familiar surroundings**
  - **Speech problems**
  - **Misidentification**
  - **Confusion**
  - **Night wandering - sundowning**
- **Late**
  - **Neurological disability**
  - **Increased muscle tone**
  - **Wide based gait**
  - **Jargon dysphasia**
- **Terminal**
  - **No personality**
  - **No communication**
  - **Emaciated**
  - **Double incontinent**
  - **Limb contractures and primitive reflexes emerge – jaw jerk, grasp**

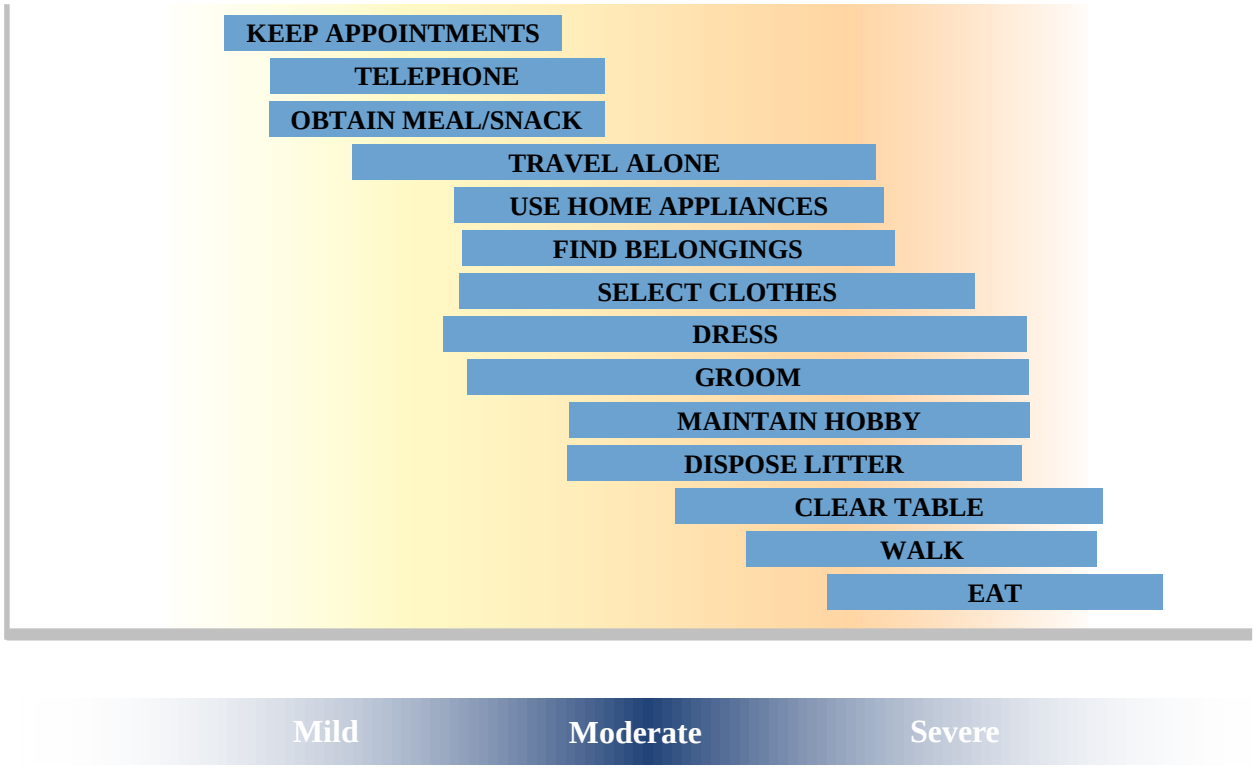
MEMORY CHANGES IN EARLY AD

Someone with AD symptoms	Someone with normal age-related memory changes
Forgets entire experiences	Forgets part of an experience
Rarely remembers later	Often remembers later
Is gradually unable to follow written/spoken directions	Is usually able to follow written/spoken directions
Is gradually unable to use notes as reminders	Is usually able to use notes as reminders
Memory loss interferes with activities of daily living	No significant impairment of activities of daily living
Is gradually unable to care for self	Is usually able to care for self

EARLY FUNCTIONAL SIGNS OF AD

- An important sign of AD is change over time in levels of function
- People have reduced levels of functioning years before clinical diagnosis of AD
- As AD progresses, ability to carry out every day functions reduces

NORMAL ACTIVITIES WORSENS AS AD PROGRESSES



GUIDELINES FOR MAKING THE DIAGNOSIS OF AD

The Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition (DSM-IV) outlines a detailed set of criteria for the diagnosis of AD:[1]

- The cognitive deficits must affect one's ability to hold a job or volunteer position, fulfil domestic responsibilities, and/or maintain social relationships and must represent a significant decline from the person's previous level of functioning
- AD involves a gradual onset and progressive worsening of symptoms
- In order to receive a diagnosis of AD, the deficits cannot be due to another medical condition, such as Parkinson's Disease, thyroid problems, or alcoholism
- Similarly, the symptoms cannot occur exclusively during an episode of delirium, or be better explained by a psychological disorder such as depression or schizophrenia

DIAGNOSTIC CRITERIA FOR AD

- Multiple cognitive deficits must be present, one of which must be memory impairment
- In addition to problems with memory, one or more of the following must be present:
  - **Aphasia** - a deterioration of language abilities, which can manifest in several ways
  - **Apraxia** - difficulty executing motor activities, even though movement, senses, and the ability to understand what is being asked are still intact
  - **Agnosia** - an impaired ability to recognise or identify objects, even though sensory abilities are intact
  - Problems with **executive functioning**, such as planning tasks, organising projects, or carrying out goals in the proper sequence

CASE HISTORY B

86 year old lady who lives alone with some support from her family

Aware that her memory has been less reliable since a Right total hip replacement 6 years ago and sometimes she has more muddled and vague episodes

Family report that her memory can vary, some days it's pretty good, other days not so good, but that some parts of it are unchanged

Overall they feel that her memory has gradually declined over the last 6 years.

More apathetic at times, but able to cook her own lunch (now always fishfingers), get washed and dressed (always in the same clothes), manage her own finances (but family have set up direct debits for all the bills, and do her shopping for her).

No change in personality but much more apathetic – just sits and watches TV most of the time, but will dog sit for her daughter's small dog

No other symptoms – no misrecognition, getting lost, risks, hallucinosis, change in mobility etc.

History of copd and aortic stenosis

VASCULAR DEMENTIA

Less common in it's pure form

Embolic aetiology usually so risk factors are

hypertension

Cigarette smoking

Heart disease

Hyperlipidaemia
alcohol consumption

May see lots of infarcts and ischaemic changes on scans

CLINICAL FEATURES

- An acute onset eg after a stroke, or other less obvious cerebrovascular event, followed by a **STEPWISE** decline.
- May see gradual decline too however, can present with apathy
- Patchy deficits with areas of preserved function on cognitive assessment
- Personality is often preserved until late
- Depression and anxiety is often prominent
- Insight is often intact – **SUICIDE**

CASE HISTORY C

64 year old builder

Denies any problems

Family report 1-2 years of progressive personality change – he is less motivated, has erratic mood swings, lacks empathy about wife's diagnosis of breast cancer, tendency to crack infantile jokes and make suggestive comments to female shop assistants

His memory is good

Well orientated to time and place

Normal speech

FRONTAL LOBE DEMENTIA

Basically three main syndromes (although overlap syndromes exist)

- Behavioural variant – which can be apathetic or overactive
- Nonbehavioural (language) variant – primary progressive aphasia
    - Progressive non-fluent aphasia – effortful, non-fluent speech
    - Semantic dementia – asks the meaning of familiar words, fluent empty speech, generalities

Often younger

More often have a family history (in 50%)

Slow and insidious onset – may present initially with psychotic or depressive symptoms

FEATURES

Repetitive behaviours, more obsessional

Disinhibition – reduced social awareness, Lack of judgement

Lability of affect

Shallowness, lack of empathy

Apathy

Inappropriate jocularity

Reduced spontaneity of language

Incontinence

Primitive reflexes

Memory loss is variable

Change in appetite
Distractible
Agnosias and dyspraxias are less common

Change in sensitivity to pain or temperature

CASE HISTORY D

- 67 YEAR OLD RETIRED SHOP ASSISTANT
- C/O PROBLEMS WITH MEMORY AND CONCENTRATION
- 6/12 H/O RAPID DECLINE IN MEMORY FROM NORMAL BASELINE, TOGETHER WITH CHANGE IN PERSONALITY (MORE APATHETIC AND DISINTERESTED)
- MORE IRRITABLE
- APPETITE REDUCED, SLEEP DISTURBED (EMW)
- DENIES FEELING DEPRESSED BUT SAYS HE CAN'T CONCENTRATE VERY WELL ALTHOUGH THIS IMPROVES AS THE DAY GOES ON
- WELL ORIENTATED TO TIME AND PLACE

OVERLAPPING SYMPTOMS OF DEPRESSION AND AD

- Clinical depression and AD can be hard to distinguish because depression and AD have several overlapping signs and symptoms[1]
- Neuropsychological deficits are a consistent feature early in the course of AD and overlap with cognitive impairments in depression[1-3]
- Overlapping signs can include[1-3]
    - Apathy
    - Disturbance in concentration
    - Loss of interest
    - Social withdrawal
    - Self-neglect
    - Irritability
    - Anxiety

DEPRESSION VS DEMENTIA

Depression -

Relatively acute onset

Low mood (+ psychomotor retardation in some)

Biological symptoms

Diurnal variation in cognitive impairment

Past or family psychiatric history

CASE HISTORY E

- 78 YEAR OLD MAN
- FAMILY REPORT HIS MEMORY IS SOMETIMES LESS GOOD, BUT NOT CONSISTENTLY. SOMETIMES HE APPEARS QUITE VAGUE, AT OTHER TIMES HE IS QUITE ALERT.
- HOWEVER THEY HAVE NOTICED HE IS STRUGGLING TO SHOP, AND RECENTLY GOT LOST ON THE WAY TO THE NEWSAGENT (HE HAS BEEN VISITING THE SAME SHOP FOR THE LAST 50 YEARS)
- HE HAS BEEN LESS STEADY ON HIS FEET AND FELL IN THE GARDEN – HE WAS SURE HE HAD SEEN SOME CHILDREN IN THE GARDEN AND WENT OUT TO INVESTIGATE. GENERALLY HE SEEMS TO BE A LITTLE STIFFER, BUT HE DOES SUFFER FROM ARTHRITIS AND THE FAMILY ARE WONDERING IF THIS IS THE PROBLEM.
- HE IS OTHERWISE WELL, BUT HIS ELDERLY WIFE REPORTS THAT HE HAS BEEN KEEPING HER AWAKE AT NIGHT THRASHING AROUND IN HIS SLEEP.

LEWY BODY DEMENTIA

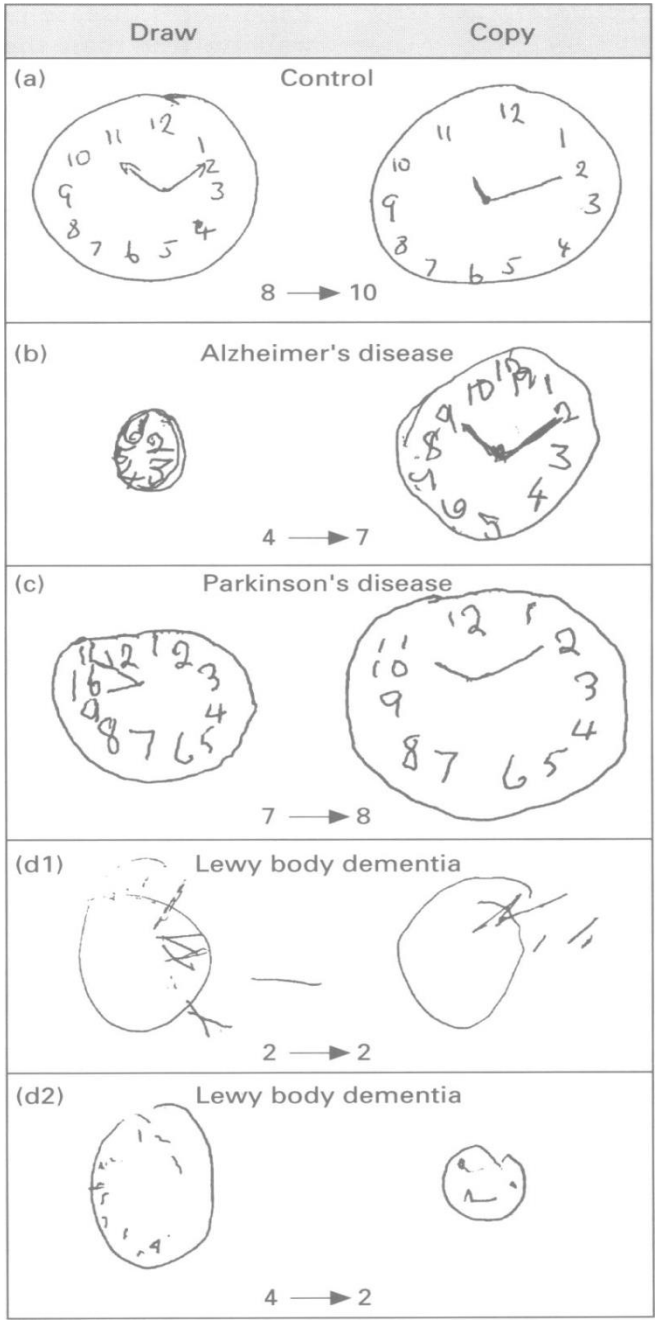
Is this a different disease from dementia associated with Parkinson's Disease?

Often a question of which came first

FEATURES

- dementia often looks like Alzheimer's type but you may get a clue with the clock drawing task
- MORE LIKELY TO HAVE
  - **Confusional states which fluctuate leading to fluctuating impairment**
  - **Hallucinations – which are recurrent, vivid, usually visual and well formed**
  - **Memory loss may be very mild or variable**
  - **Motor disorder – mild stiffness, rigidity, slowing of movement, gait disturbance, mask like face**
  - **REM behaviour sleep disorder**

IT'S IMPORTANT TO TRY AND IDENTIFY THESE PATIENTS AS THEY ARE VERY VERY VERY SENSITIVE TO NEUROLEPTICS, SO AVOID THEM IF YOU CAN.


Draw
Copy
(a)
Control
8 → 10
(b)
Alzheimer's disease
4 → 7
(c)
Parkinson's disease
7 → 8
(d1)
Lewy body dementia
2 → 2
(d2)
Lewy body dementia
4 → 2

INVESTIGATIONS

Laboratory investigations include:

- **FBC, B_{12}, Folate, U&E, LFT's, Ca, Glucose, Cholesterol, TFT's, CRP, (syphilis serology?)**

Neuroimaging:

- **CT scan on all patients,**
- MRI, SPECT, DAT when appropriate

Other investigations - as clinically indicated

- ECG, Peak Flow, CXR, EEG

COGNITIVE ASSESSMENTS

MMSE

AMT

6-CIT

Felix Post

ADAS-COG

ACE-R

Mini ACE

TYM

MOCA

CLOX 1 and 2

etc etc etc

THE CLOCK DRAWING TEST (CDT)

- The CDT is a simple tool that can be used to test for AD in primary care
- The test takes only a few minutes and has high sensitivity for detecting cognitive difficulties and may provide a pointer towards some of the other dementias
- The person undergoing testing is asked to:
  1. Draw a clock
  2. Put in all the numbers
  3. Set the hands at ten past eleven
- Several scoring systems are available
- Copying a clock may provide additional info

ONE SCORING SCHEME

“I want you to draw me a clock face with all the numbers on it and showing the time as 10 past 11”.

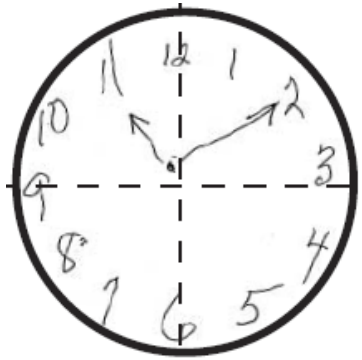
Scoring

Draws a circle – 1 point

Has numbers 1 – 12 – 1 point

The numbers are distributed correctly in the four quadrants – 1 point

The hands are correctly placed – 1 point



1 point for circle

1 point for numbers 1-12

1 point for correct distribution within the circle

1 point for hands placed correctly

WHAT DOES THE TEST ASSESS?

Visuospatial and executive function

Elements of praxis, concentration, memory, planning and orientation involved in the task

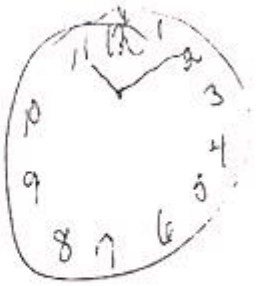
Use in collaboration with other cognitive tests

Can be used to measure disease progression

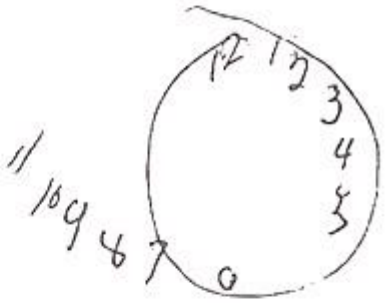
Easy to administer and can show problems even when other tests are scoring well

Examples of Clock Drawing Test

Early Alzheimer's Disease

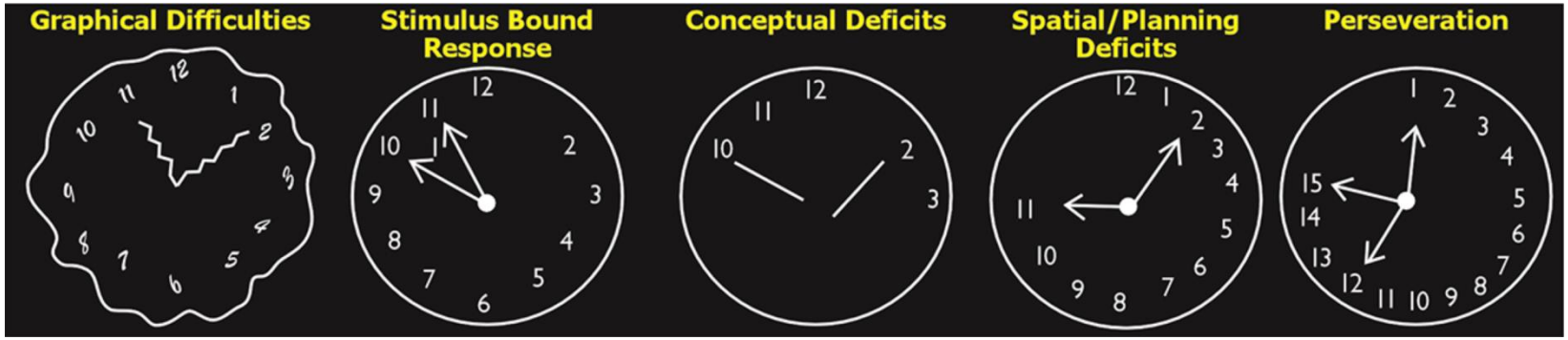


Moderate Alzheimer's Disease



Severe Alzheimer's Disease

VARIOUS TYPES OF ERRORS



ADDED EXTRAS

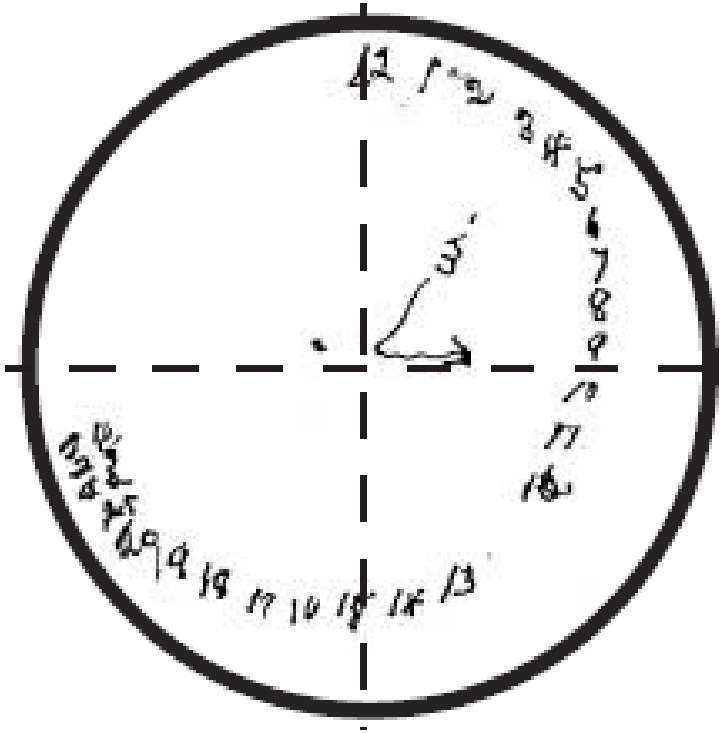
Look for hemi neglect - ?VaD

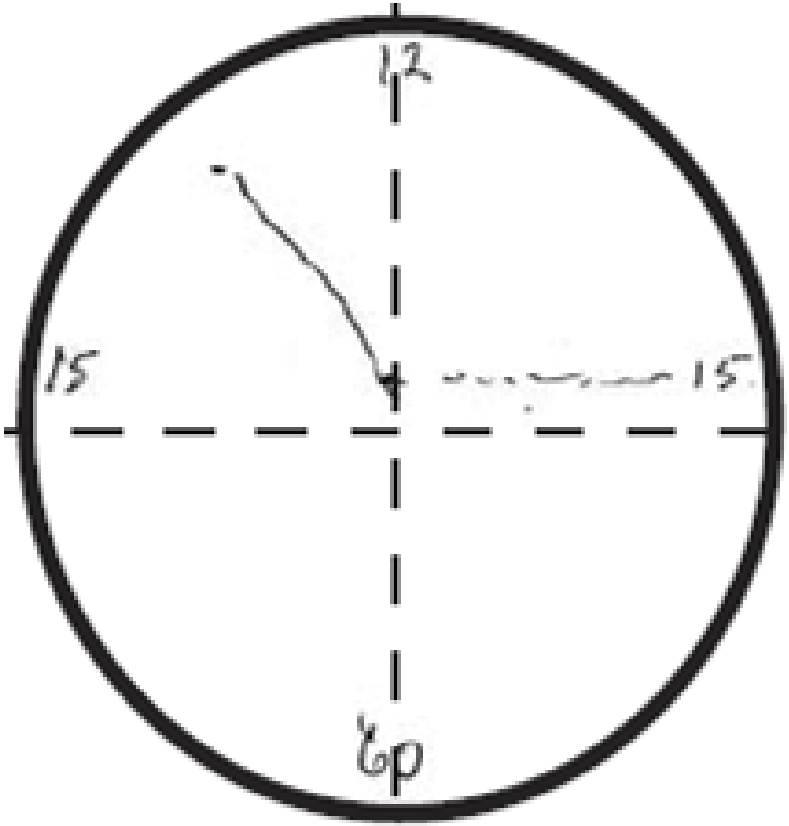
Micrographia - ?PDD,

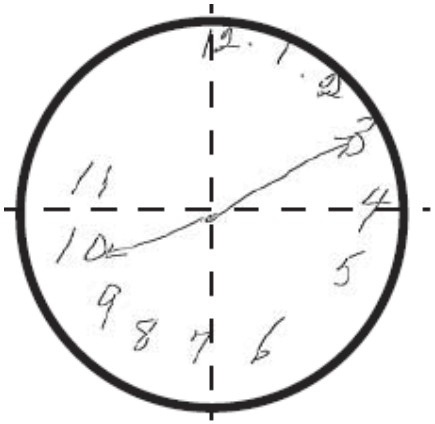
Perseveration? - ?FTD

If they can't draw can they copy? If not ?LBD

FTD – generally score better, fewer visuospatial errors, fewer stimulus bound responses, fewer conceptual deficits




12
15
15
6p


12
1
2
3
4
5
6
7
8
9
10
11

SO WHAT DO I DO?

Conscious level – alert, fluctuating,

Mini ACE

Clock drawing task

Frontal lobe battery

General knowledge

Autobiographical knowledge - ?confabulates

OVERALL MANAGEMENT STRATEGY

- Promote exercise, healthy diet and lifestyle:
    - Minimise risk of adult onset diabetes, obesity and high blood pressure (BP)
- Promote social interaction and emotional wellbeing
    - Avoid stress, anxiety and depression
- Promote healthy sleep habits
- Promote mental agility
    - Avoid mental stagnation (e.g. enrol in social activities at the nearest day centre)
- Avoid smoking and excessive alcohol consumption
- Control comorbid conditions
- Consider memory enhancing medication if appropriate
- Non-stat organisations
- Consider referral to social services

WHO CAN I ASK IF I'M NOT SURE?

Depends on the area you're working in

All areas will have a specialist Memory service that you can contact for advice or to refer patients who don't fit an obvious pattern of dementia – you should be referring anyone you suspect of FTD, Lewy Body and anything else that seems unusual.

If you're not sure, hopefully you will know how to contact your local older adult mental health teams, and they will signpost you to their local memory services – either separate or contained within the older adult community teams