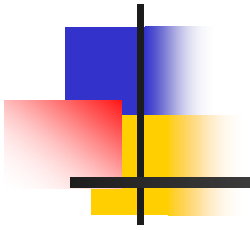


Dementia - Diagnosis and Subtypes



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Jan 2007



Resources

- IPA website - BPSD Education Pack
www.ipa-online.org
- Rabins PV et al (1999): Practical Dementia Care
- Rockwood and McKnight (2001): Understanding dementia
- McKeith (2002): Dementia with Lewy bodies. Br J Psychiatry 180-144-147.



Outline

- Case
- Dementia
 - Definition
 - Natural course
 - Psychiatric manifestations
- Subtypes



Objectives

- Outline components of dementia
- Differentiate subtypes of dementia
- Identify management issues of Dementia with Lewy Bodies



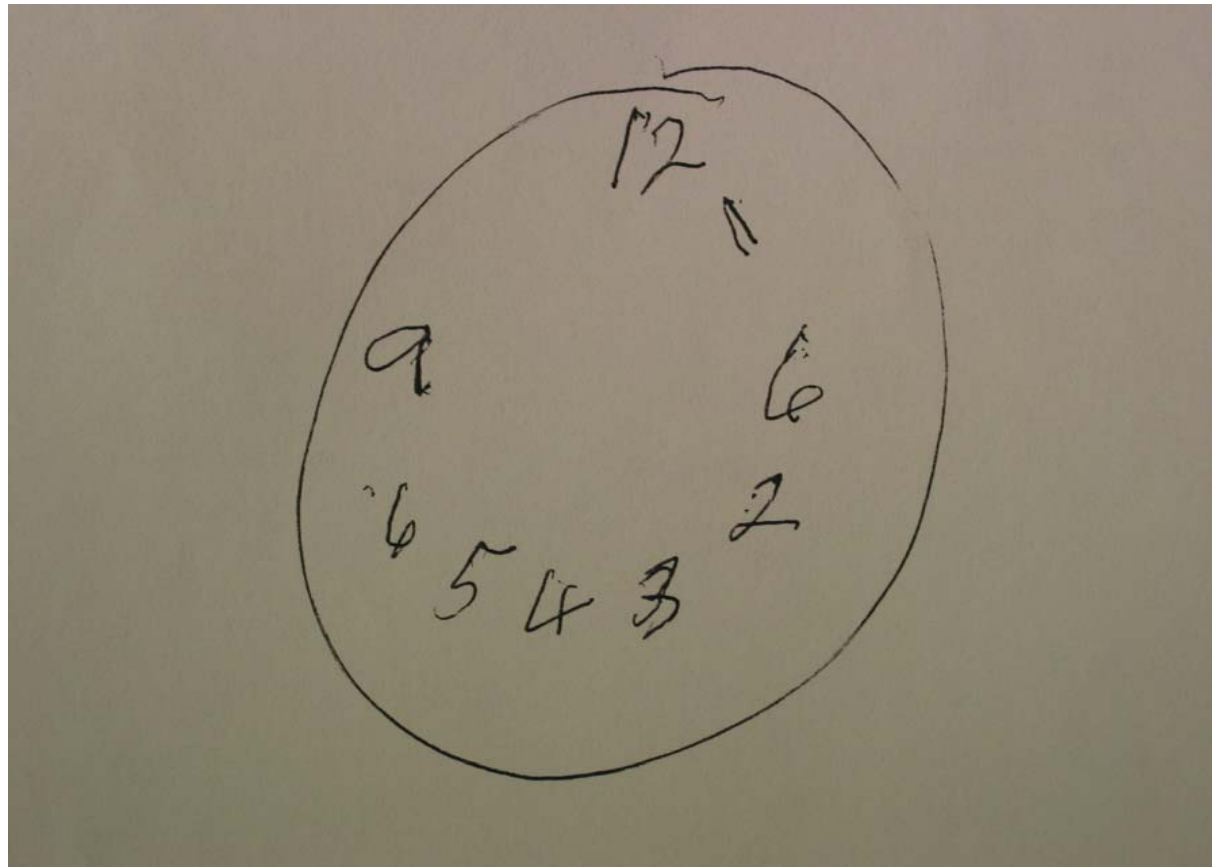
Case



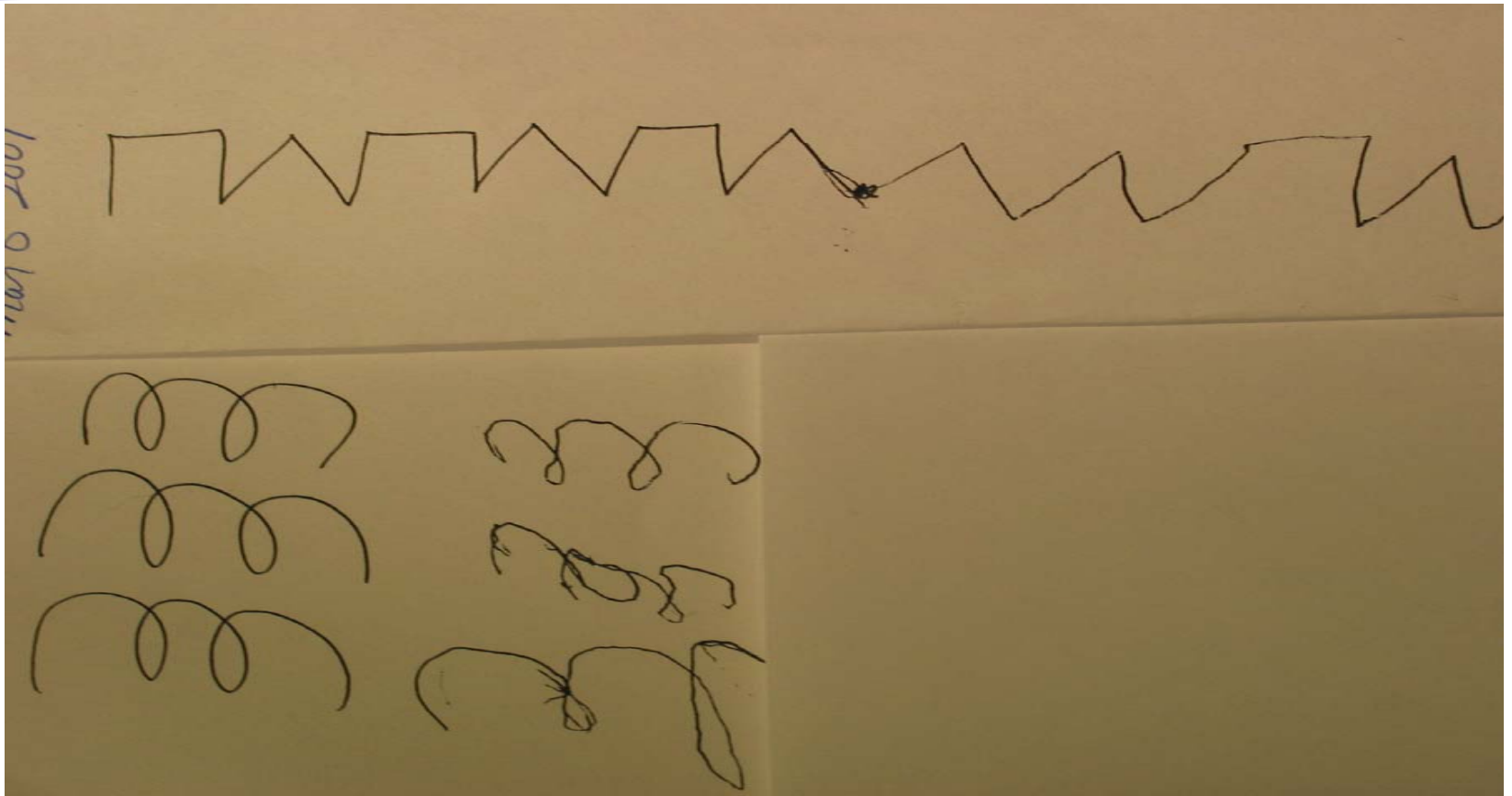
Mr. Golf - Mar 2001

- 71 yo married male, retired roofer
- Enjoying retirement, golfs, goes south
- Started to “slow down”
 - Slow walking, tough to golf
 - Apathy - doesn't want to do anything
 - MMSE 24/30
 - Depression
- MRI 2000 - age appropriate atrophy

Mr. Golf - clock

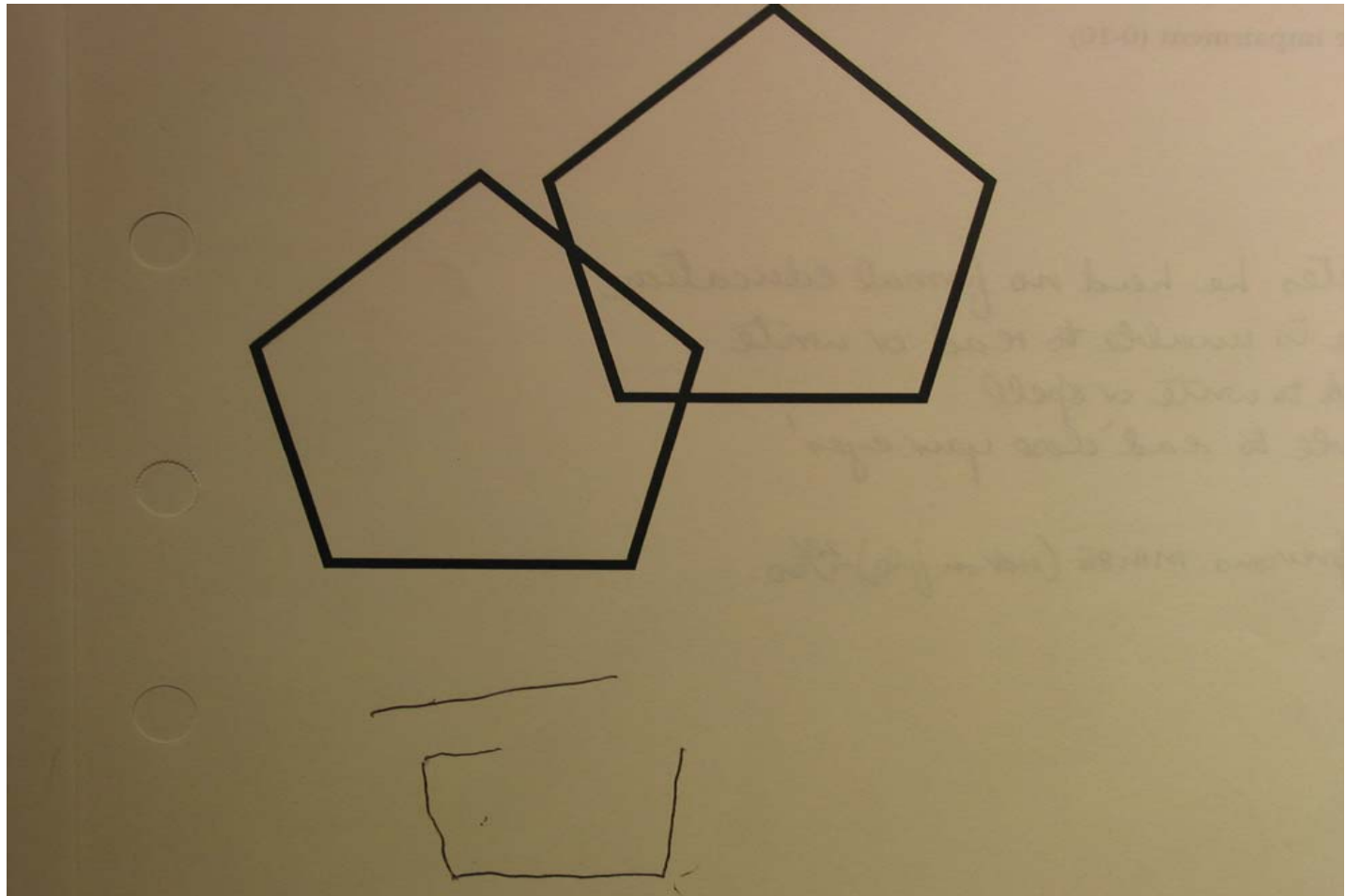


Mr. Golf - multiple loops and alternating sequences





Mr. Golf - pentagons





Mr. Golf - July 2001

- Depression treated with bupropion
- Went south on yearly trip
 - Didn't golf
- Depression improved, apathy stayed
- Parkinsonism (cogwheel rigidity)



Mr. Golf Sept 01

- Visual Hallucinations
 - Man and woman in his room at night or while he shaves, they don't speak
- Start Aricept 5 mg ++ nausea
 - 2.5 mg OD tolerated better



Mr. Golf Nov 01

- Hallucination improve
- Less depression
- Lost license, drives car in driveway



Mr. Golf - Sep 02

- Parkinsonism worsening
- Episodes of faintness, being “zoned out”
- Worsening function
 - Needs help bathing and dressing



Mr. Golf - Nov 02

- OT - suggestions for bathtub, stairs, walking safety
- HCNS -respite
 - Initially patient resistant, but working out
- Aricept 5mg/10 mg alternate days



Mr. Golf - Mar 2003

- 2 year later (MMSE 18/30)
 - Not depressed
 - Apathy
 - Visual hallucinations (people in bathroom) on and off



Mar 03 cont'd

- Orthostasis
(150/80 lying; 120/70 standing)
- Not traveling (poor mobility, bathroom on plane)
- Not golfing
- Caregiver stress
- ADL - assistance for dressing, grooming, bathing



Definition

DEMENTIA

- Memory loss
- At least one other cognitive deficits
 - aphasia (language)
 - apraxia (tasks)
 - agnosia (pattern recognition)
 - executive function (decisions, planning)
- These lead to functional decline

DSM-IV



Functional disability in dementia

■ IADLs

- Working
- Shopping
- Cleaning house
- Handling money
- Using phone
- Driving
- Maintaining home

■ ADLs

- Dressing
- Bathing
- Personal care
- Navigating in home
- Eating



Clinical features of Dementia

Functional
impairment

- * IADL
- * ADL

Psychiatric

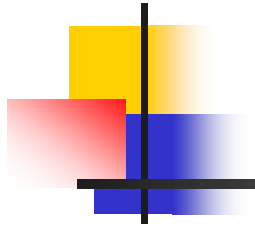
- * Mood
- * Agitation
- * Wandering

Dementia



Cognitive decline

- * Memory loss
- * Aphasia
- * Apraxia
- * Agnosia
- * Executive
function
difficulties



BPSD

Behavioral and
Psychological
Symptoms of
Dementia



BPSD

- Behavioral

- agitation
- screaming
- restlessness
- wandering
- sexual disinhibition
- hoarding
- cursing

- Psychological

- anxiety
- depression
- hallucination
- delusions
- apathy

BPSD-

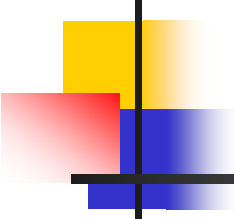
Frequency of symptoms

- Personality changes
 - up to 90%
- Affective
 - depression up to 80%
 - mania 3-15%
- Agitation
 - behavior up to 50%
 - aggression up to 20%
- Psychosis
 - delusions 20-73%
 - misidentifications 23-50%
 - hallucinations 15-49%



Top Ten Problems Amenable (maybe!) to Medications

- Anxiety, restlessness
- Sadness, crying, insomnia
- Withdrawn, apathetic behavior
- Regressed behavior
- Verbal aggression
- Elation, pressured speech, hyperactivity
- Delusions, paranoia
- Hallucinations
- Physical aggression
- Sexually inappropriate behavior



Top Ten Problems NOT Amenable (probably) to Meds

- Wandering
- Inappropriate urination/defecation
- Inappropriate dressing/undressing
- Annoying activities (pulling on locked doors)
- Frequent repetition
- Hiding/hoarding
- Pushing wheelchair bound co-patient
- Eating inedibles
- Inappropriate isolation
- Tugging at/removal of restraints



Subtypes of Dementia



Alzheimer's Disease



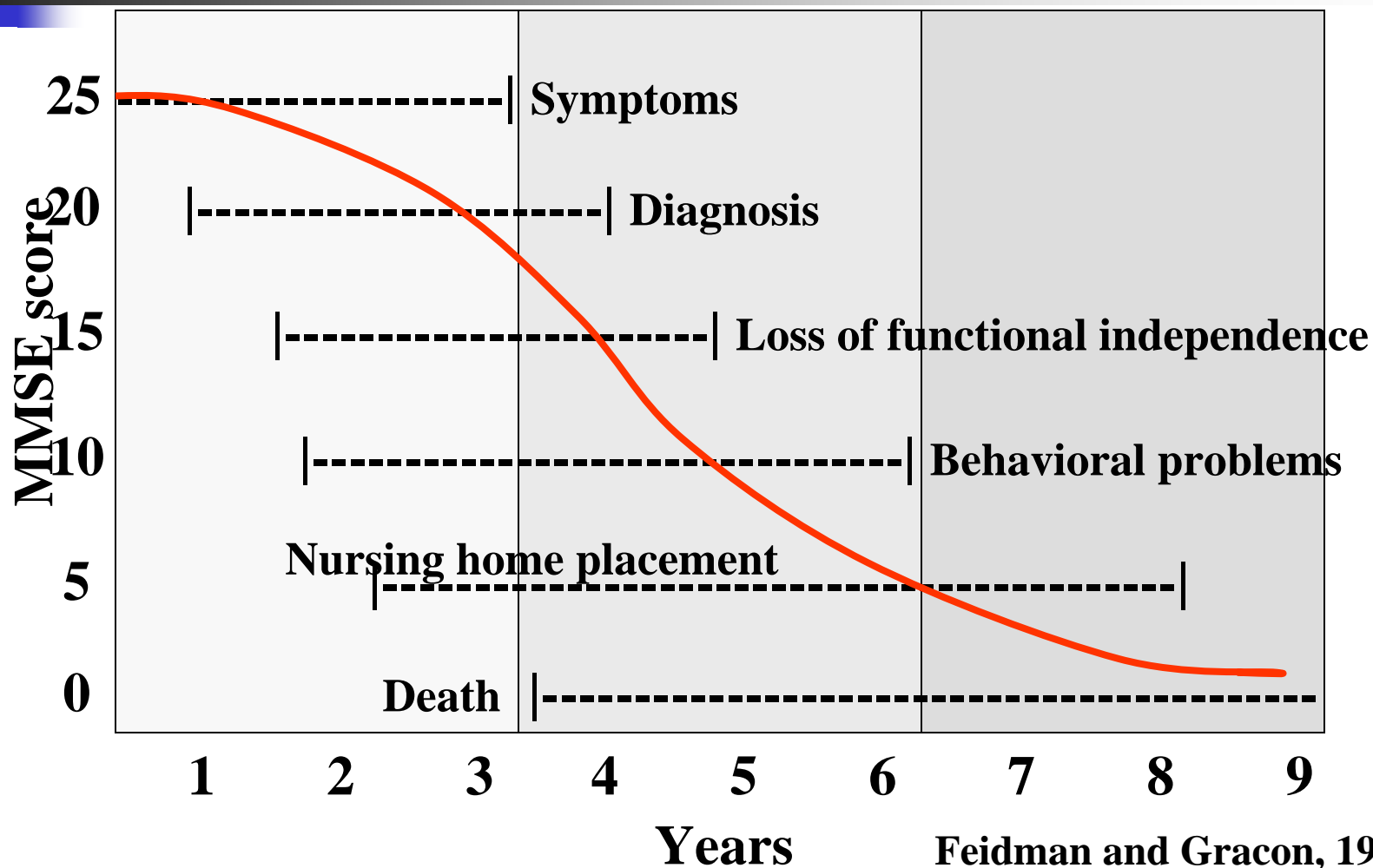
AD- the extent of the problem

- AD represents over 50% of all dementia cases
- AD prevalence doubles every 5 years after 60 years of age
- AD affects 15 million people worldwide

AD = Alzheimer's Disease

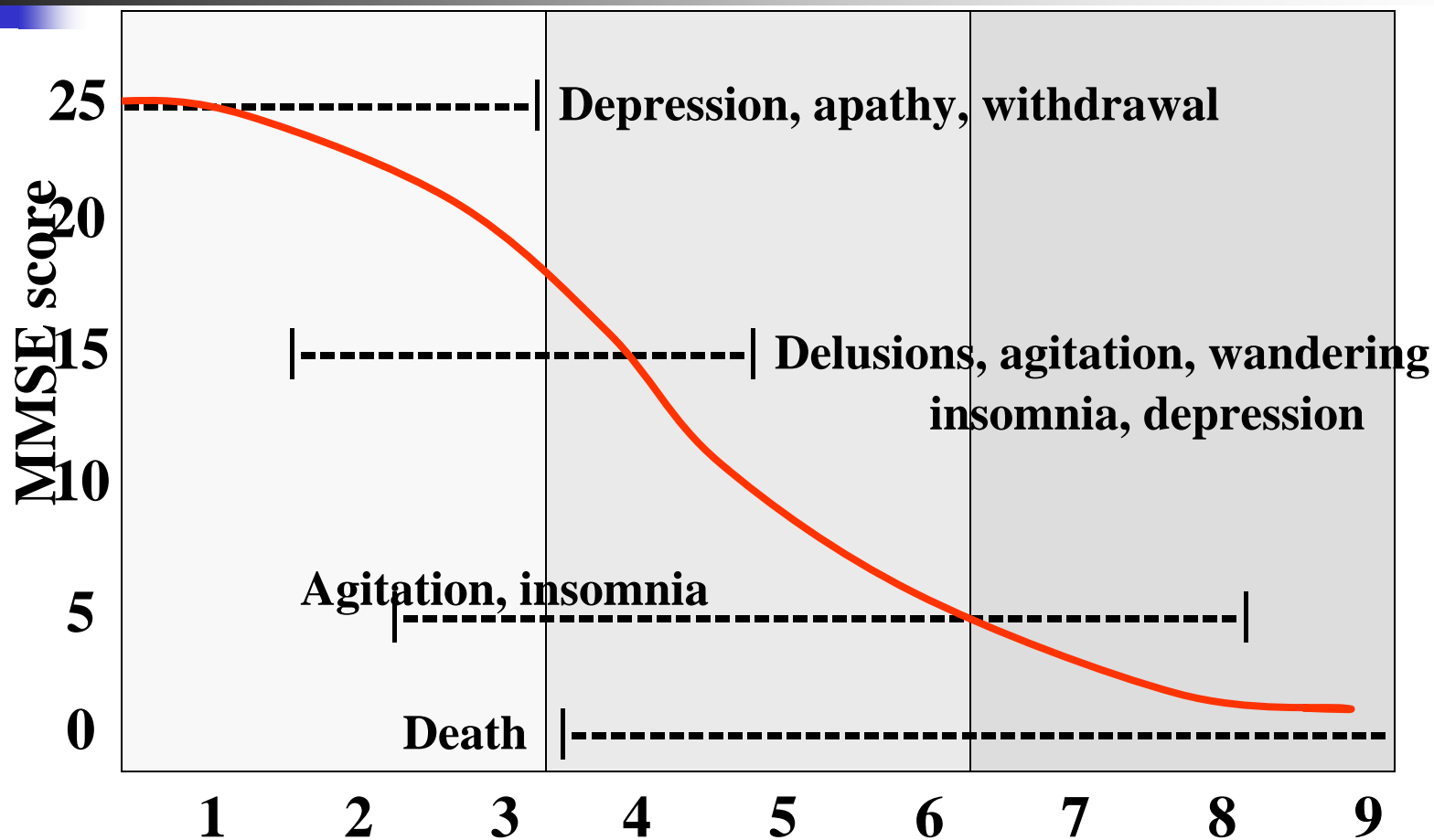
AD prognosis

Optimal case



Feidman and Gracon, 1996

AD - Psychiatric symptoms



Years

Adapted from Feidman and Gracon, 1996



Clinical features of AD

Mild stage (MMSE 21-30)

Cognition

- * Recent memory
- * Word finding
- * Problem solving

Function

- * Work
- * Shopping
- * Cooking
- * Housekeeping
- * Reading

Psychiatric

- * Apathy
- * Withdrawal
- * Depression
- * Irritability

Adapted from Galasko, 1997

Clinical features of AD

Moderate stage (MMSE 10-20)

Cognition

- * Recent memory
- * Language (names, paraphasias)
- * Insight
- * Orientation
- * Visuospatial ability

Function

- * IADL loss
- * Getting lost
- * Difficulty dressing -cues helpful

Psychiatric

- * Delusions
- * Wandering
- * Agitation
- * Insomnia
- * Depression

Adapted from Galasko, 1997



Clinical features of AD

Severe stage (MMSE <10)

Cognition

- * Disoriented, may not recognize spouse
- * Difficulty performing familiar activities (apraxia)
- * Language (phrases, mutism)

Function

- * Basic ADLs
 - Dressing
 - Bathing
 - Eating
 - Continence
 - Walking
 - Motor slowing

Psychiatric

- * Agitation
 - Verbal
 - Physical
- * Insomnia

Adapted from Galasko, 1997



Vascular Dementia



Vascular Dementia

- 2nd most common dementia
- Clinically heterogeneous



Vascular Dementia

- History: sudden onset, follows stroke or TIA, plateaus
- Possible associations: vascular risk factors (CAD, HTN, ↑chol, DM, smoking)
- Hallucinations early in course (also Lewy Body Dementia)
- Gait abnormalities early in course (NPH)
- Seizures early in course



Vascular Dementia

- Urinary incontinence early in course (also in NPH)
- Focal neurologic signs: asymmetric hyper-reflexia, extensor plantar response
- Focal cognitive signs (aphasia)



Vascular Dementia: 2 types

1. Multiple large or small strokes

- “*Multi-infarct dementia*”
- Sudden onset, step-wise progress
- Focal neurologic symptoms + signs
- Cognitive deficits patchy



Vascular Dementia: 2 types

2. White matter changes (leukoariosis) and subcortical infarcts

- Gradual onset
- Patchy cognitive deficits
- No focal signs or symptoms
- Subcortical cognitive deficits (memory loss and slowness of thought) with motor slowing pathognomic



Mixed dementia

Alzheimer's + Vascular



Dementia with Lewy Bodies

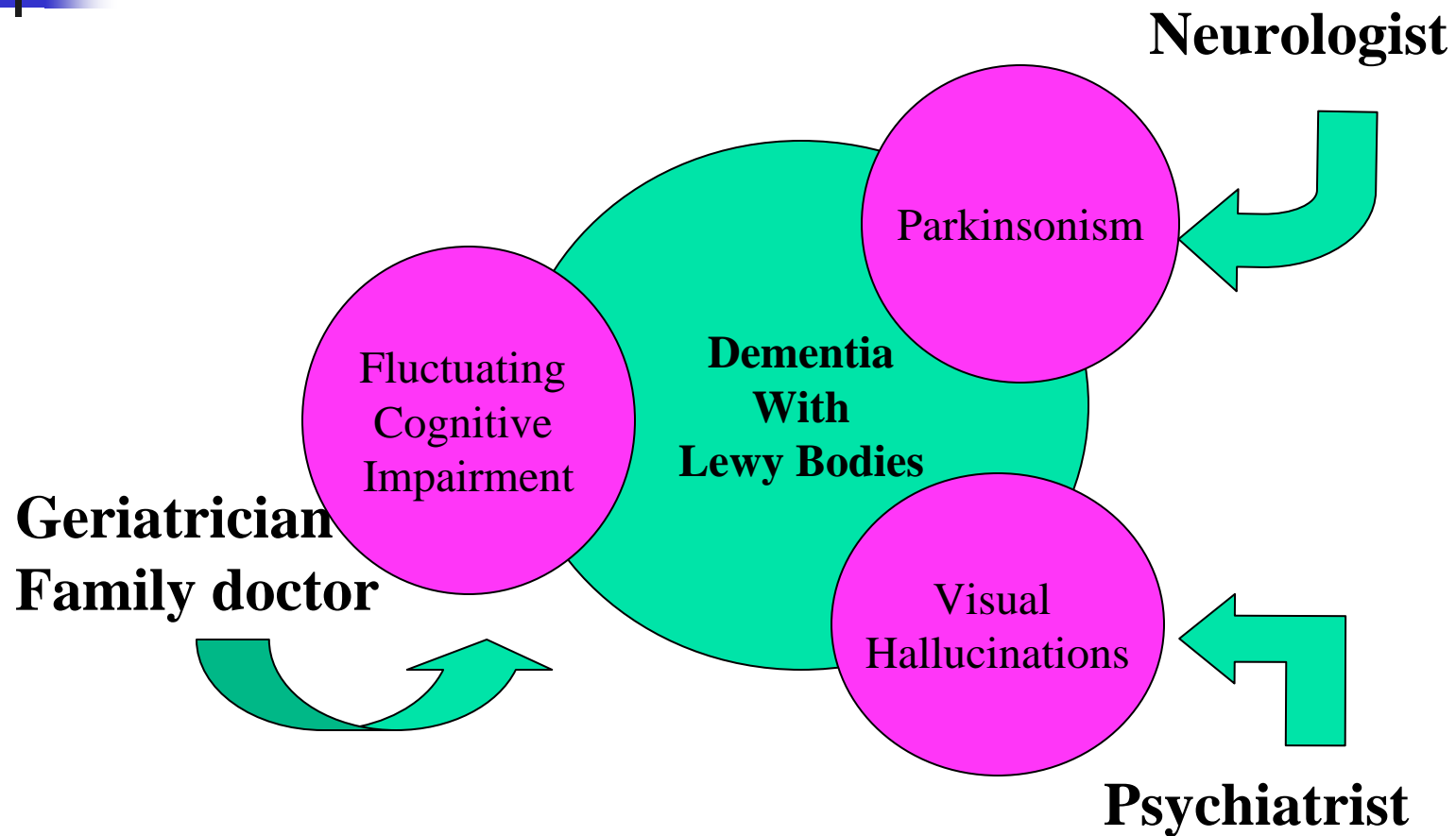


Why Dementia with Lewy Bodies is important

- Clinical presentation and course differs from Alzheimer's disease
- Management complicated by neuroleptic sensitivity
- May be better treated by cholinergic enhancers

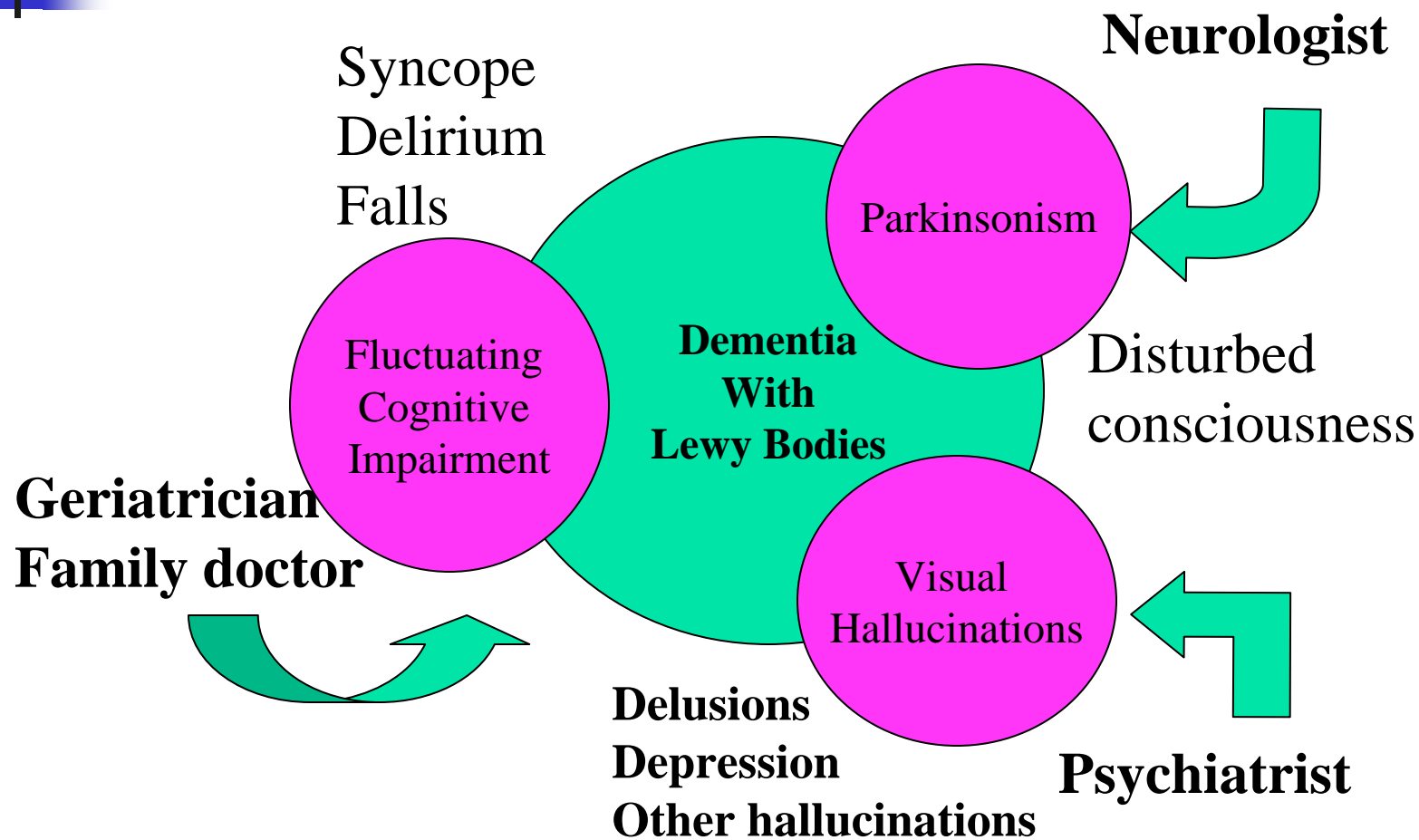
Clinical Features - Triad

Dementia with Lewy Bodies



Clinical Features

Dementia with Lewy Bodies





Epidemiology

Dementia with Lewy Bodies

- 15-20% of dementia
 - hospital autopsy (Weiner et al, 1999)
 - community-based dementia case register (Holmes et al, 1999)
- Age at onset 50-83 years (mean 75)
- Slight excess of males (1.5:1)



Clinical Features

Dementia with Lewy Bodies

	At presentation (%)	Ever (%)
Dementia	82	100
Fluctuation	58	75
Visual hallucinations	33	46
Auditory hallucinations	19	19

McKeith 2002, Br J Psychiatry 180,144-147

Clinical Features

Dementia with Lewy Bodies

	At presentation (%)	Ever (%)
Depression	29	38
Parkinsonism	43	77
Falls	28	37
Neuroleptic sensitivity	61	



Clinical Features

Dementia with Lewy Bodies

- **Dementia** is usually the presenting feature
 - Progressive deterioration OR
 - Episodic confusion state resembling intermittent delirium
 - Characteristic profile⁶:
 - *Attention deficits*
 - *Prominent fronto-subcortical dysfunction*
 - *Visuospatial function*
 - Initially memory deficits mild, they develop as disease progresses



Clinical Features

Dementia with Lewy Bodies

- May also present with;
 - Parkinsonism
 - Psychiatric disorder (psychosis, behavior)
 - Orthostatic hypotension, falls or transient disturbances of consciousness



Visual hallucinations

Dementia with Lewy Bodies

- 2/3 patients report them (1/3 early)
- See people (children) and animals that appear real but make no noise (rich in detail and color)
- Often coexist with perceptual difficulties and misidentifications
- Typically daily
- Emotional response varies from indifference or even amusement to intense fear

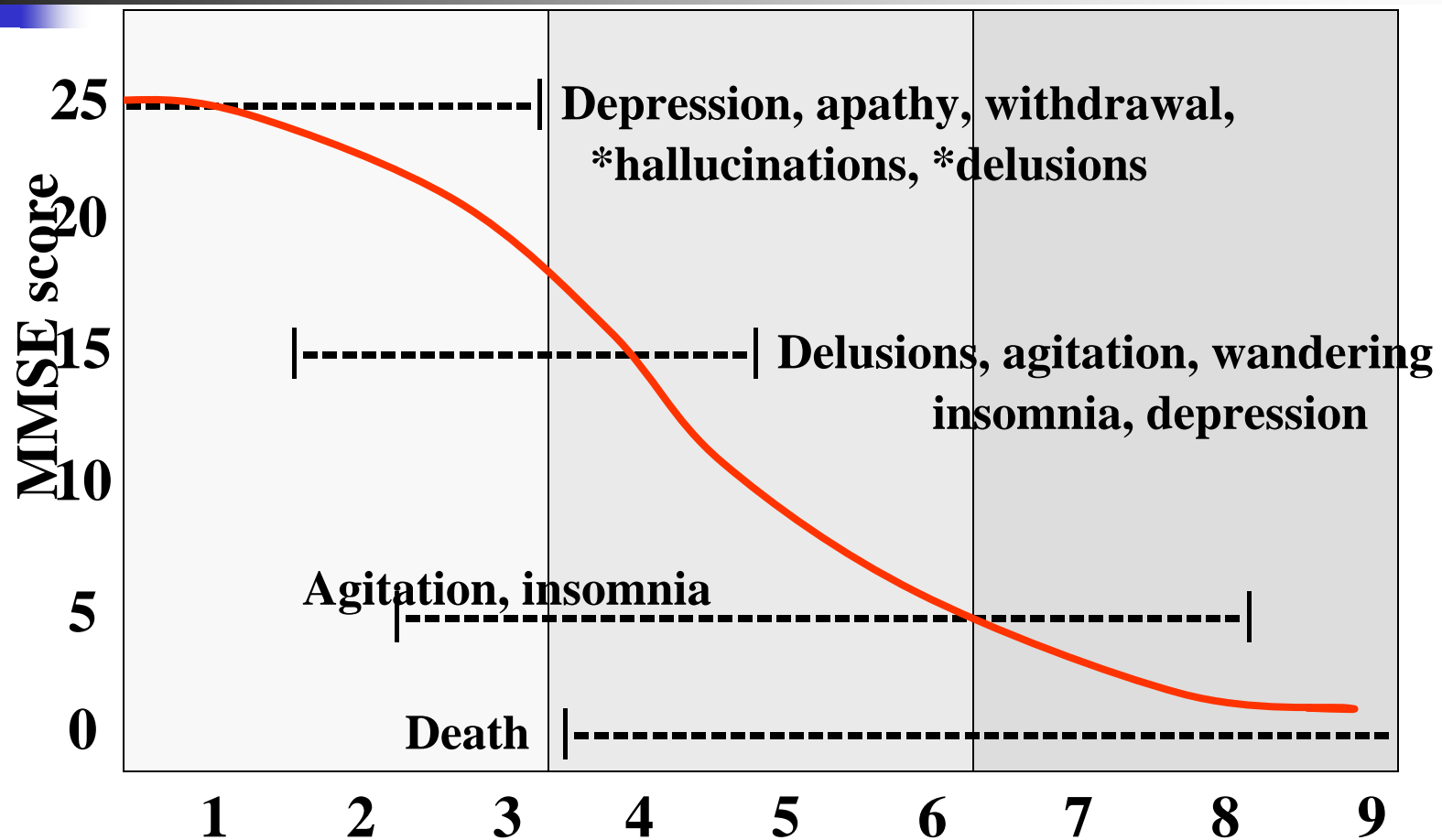


Psychosis

- **Delusions** in 65% (often secondary)
- Other hallucinations

Psychiatric symptoms

Dementia with Lewy Bodies



Years

Adapted from Feidman and Gracon, 1996



Parkinsonism

Dementia with Lewy Bodies

- Up to 70%¹
- 25% symptom free
- Bradykinesia, limb rigidity and gait disorders are most common¹
- Tremor less common
- May be as severe as Parkinson's



Fluctuation

Dementia with Lewy Bodies

- Fluctuation in cognition and level of consciousness in the most characteristic feature¹
 - Usually evident on a day-day basis
 - Marked amplitude between best and worst performance distinguishes it from minor day-to day variations that in dementia of any cause



Fluctuation

Dementia with Lewy Bodies

- Transient disturbances of consciousness (patients mute and unresponsive for periods of several minutes) may represent extreme of fluctuation in attention and arousal
 - Often mistaken for TIA



Depression

Dementia with Lewy Bodies

- 40% have Major Depressive episode¹
- Similar to rate in Parkinson's
- Significantly greater than Alzheimer's disease¹



Frontotemporal Dementia



Frontotemporal Dementia

- May be up to 20% of early-onset dementia
- Varied clinical picture of many subtypes
- **Prominent disinhibition**
- Relative memory sparing



Frontotemporal Dementia

- Taxonomy confusing
- 1°: Pick's, Frontotemporal, Progressive Subcortical Gliosis, Focal Lobar Atrophy

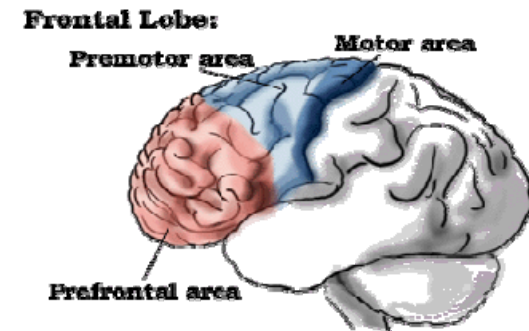


Frontal Dementias

- 2°: ALS, EtOH, HIV, Parkinson's*, Huntington's*, CJD, MS, etc.
 - *basal ganglia: movement disorder, aware of dementia, mental slowing
 - subfrontal white matter (Binswanger's, MS): white matter lesions not typical of FTD

Frontal Lobe Sections

1. Motor Strip
2. Premotor (expressive aphasia)
3. Prefrontal cortex
 1. Orbitofrontal region
 2. Dorsolateral region
 3. Medial (anterior cingulate) region





Frontotemporal Dementia

- **3 typical features** (may have 1 or more)
 1. Executive dysfunction
 2. Disinhibition
 3. Apathy



Frontal Lobes - dorsolateral prefrontal (DLPF)

- **“executive dysfunction”**
 - poor problem solving and judgment
 - difficulty with meds, finances
 - poor attention
 - stimulus bound = get “stuck”
 - memory: poor retrieval, preserved recognition
 - abnormal motor programming



Frontal Lobes - Orbitofrontal

- “disinhibition” *witzelsucht*
 - ignore social conventions
 - Impulsive
 - lack of insight
 - do not complete tasks
 - poor risk assessment
 - lability, irritability, looks like hypomania



Frontal Lobes -

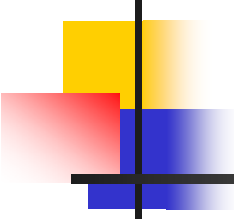
Anterior cingulate/medial frontal

- “apathy” *abulia*
 - emotional - unmotivated, no goals
 - cognitive - cannot formulate or implement plans +/- slowness of cognition
 - motor - do not engage in activities
 - *akinetic mutism* most severe form (motionless and mute)
 - Not depression



Frontotemporal Dementia - Clinical

- Changes in personality precede dementia by years
 - social withdrawal, apathy
 - loss judgment, loss insight, behavioral disinhibition (shoplift, sexual, urinating in public)
 - apathy



Frontotemporal Dementia - Cognitive Decline

- Impaired executive skills early
 - perseveration
 - poor shifting sets: Trail B, WCST
 - poor verbal fluency
- In end stages, difficult to distinguish from Alzheimer's



Management



Management

1. Make diagnosis
2. Identify problem symptoms
 - Including carer burden, functioning and risk
3. Non-pharmacologic interventions
 - Cognition- orientation, memory prompts and attention cues
 - Psychiatric -education, reassurance
 - Motor - PT, mobility aids, safety
4. Pharmacological interventions



Dementia management

- Home supports, respite, nursing home
- Caregiver support - Alzheimer's Society
- Driving
- Competence, POA
- Medication supervision, Pharmacare
- Autopsy



Cholinesterase inhibitors (ChEI)

- Used in:
 - Alzheimer's
 - Dementia with Lewy Bodies
 - Vascular dementia
- Patients who respond well are more likely to have DLB than Alzheimer's¹
 - Postsynaptic cortical muscarinic receptors are functionally intact



Cholinesterase inhibitors

Dementia with Lewy Bodies

- ChEIs effective in some (not all)
- Becoming first-line for²
 - Cognitive dysfunction
 - Apathy
 - Psychosis
 - Agitation



Return to Mr. Golf

- Triad of symptoms - Lewy body
- Early apathy and depression
- Fluctuating LOC and faintness
- Orthostasis
- Falls



Conclusions

- Dementia
 - Cognition - memory + other
 - Function impaired
 - Psychiatric symptoms common
- Types
 - Alzheimer's - memory impaired
 - Vascular - early gait, psychiatric, incontinence
 - Frontotemporal - disinhibited behavior early



Conclusions - Dementia with Lewy Bodies

- Triad
 - Cognition
 - Parkinsonism
 - Hallucinations
- Fluctuations in cognition or LOC
- Cholinesterase inhibitors first-line
- Care with antipsychotics