DEMENTIA

- The diagnosis of dementia types
- Recognise the behavioural and psychological symptoms associated with dementia
- Identify the risks of poly-pharmacy in a patient with dementia
- Compare pharmacological and non-pharmacological interventions for patients with dementia

Dr Amalia Spiliopoulou MRCP(UK)CCT(UK)DGM(UK)FRACP

Consultant Physician Geriatrician SALHN

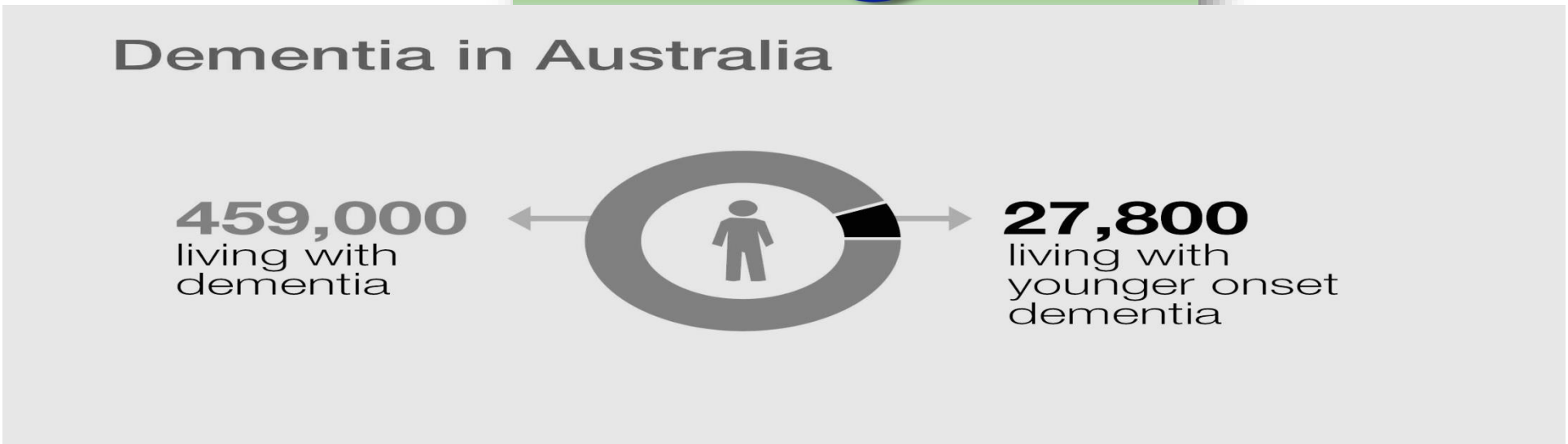
Dementia Prevalence Epidemic

2020

38,400 South Australians

2028

47,300



W H Y ?

Multiple Potential Pathways to Dementia

LIFESTYLE FACTORS
Physical Activity
Diet
Drug/Alcohol Abuse

ENVIRONMENTAL FACTORS
Education
Head Trauma
Toxins/Other

PSYCHOSOCIAL FACTORS
PTSD
Depression/Anxiety

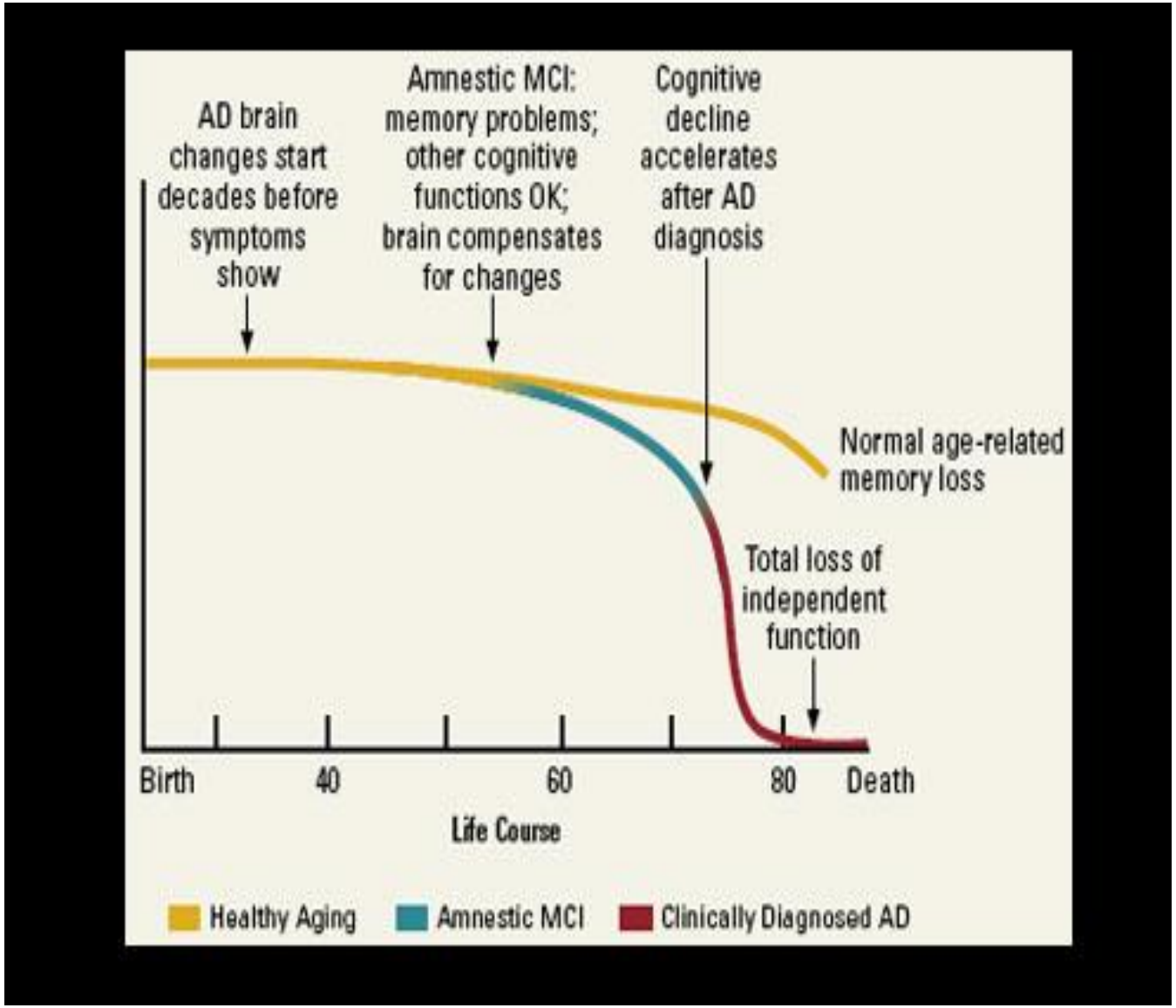
OTHER MEDICAL RISKS
Metabolic / Obesity / Diabetes
Hypertension / Heart Disease / Stroke
Inflammation
Certain Infectious Diseases
Certain Medications

HEALTH DISPARITIES FACTORS

AGING
GENETIC FACTORS APOE4 PSEN1 MAPT TDP-43
SEX F>M

DEMENTIA TYPES

Disease Progression

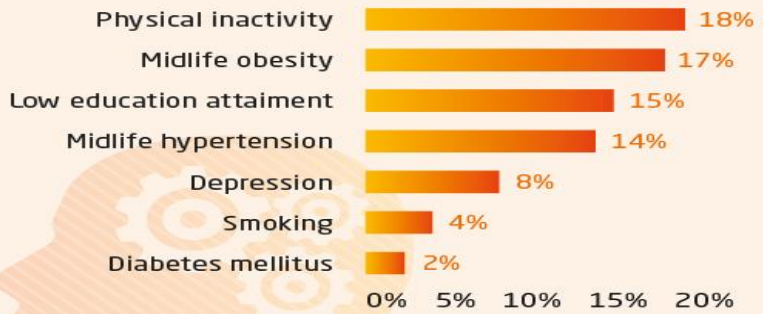


Rate of progression

- slow progress
- fast progress

Risk Factors for Dementia

Proportion of dementia cases attributable to different risk factors



Source: Adapted from Ashby-Mitchell et al. (2017)

Resilience to Dementia

Factors that predict resilience to dementia

Female only	• Living with someone • Being married • Lower pulse pressure • Higher peak expiratory flow • Faster walking time • Faster turning time • Volunteering more often
Male only	• Less depressive symptoms
Both genders	• Younger age • Higher education • Stronger grip • More cognitive activity

Source: Adapted from McDermott et al. (2016)

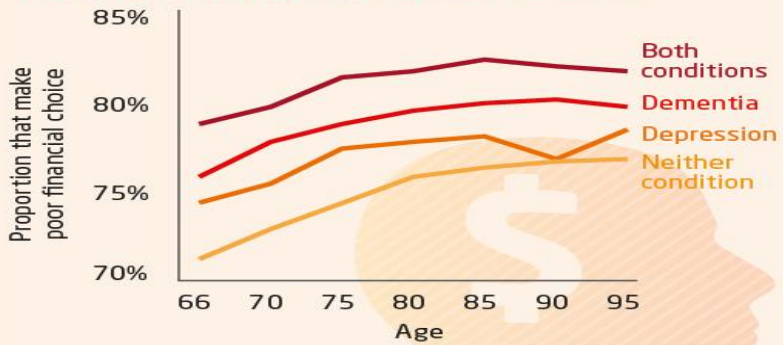
Rising Cost of Dementia

Total direct and indirect costs of dementia

Source: NATSEM calculation

Financial Fragility

Dementia and depression are correlated with poor financial decision-making



Data displayed at 5-year intervals. Source: Keane et al. (2017)

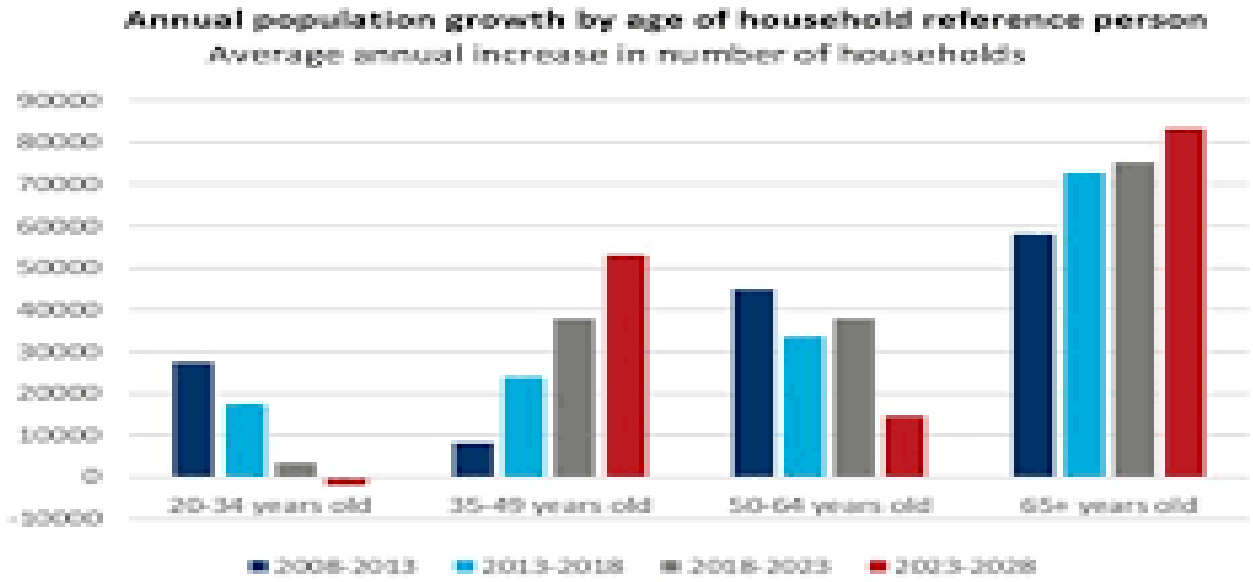
NeuRA
Discover. Conquer. Cure.

cepar

Hospital care for people with dementia 2016–17

- 43% of hospitalisations and 50% of patient days were for people aged 65 and over

In 2017, over 1 in 7 Australians were aged 65 years and over



Who is most likely to be hospitalised with dementia?

- Male hospitalisation rates were 1.3 times higher Female
- People aged 95+ were 5 times of 75–79yrs.
- Dementia overall fell by 23% (408 to 313 hospitalisations per 100,000 population)

- **Vascular dementia rose by 37%**
- **Delirium superimposed on dementia rose by 416%**

Australian Journal of
DementiaCare
For all who work with people with dementia
Vol 4 No 2 April/May 2015

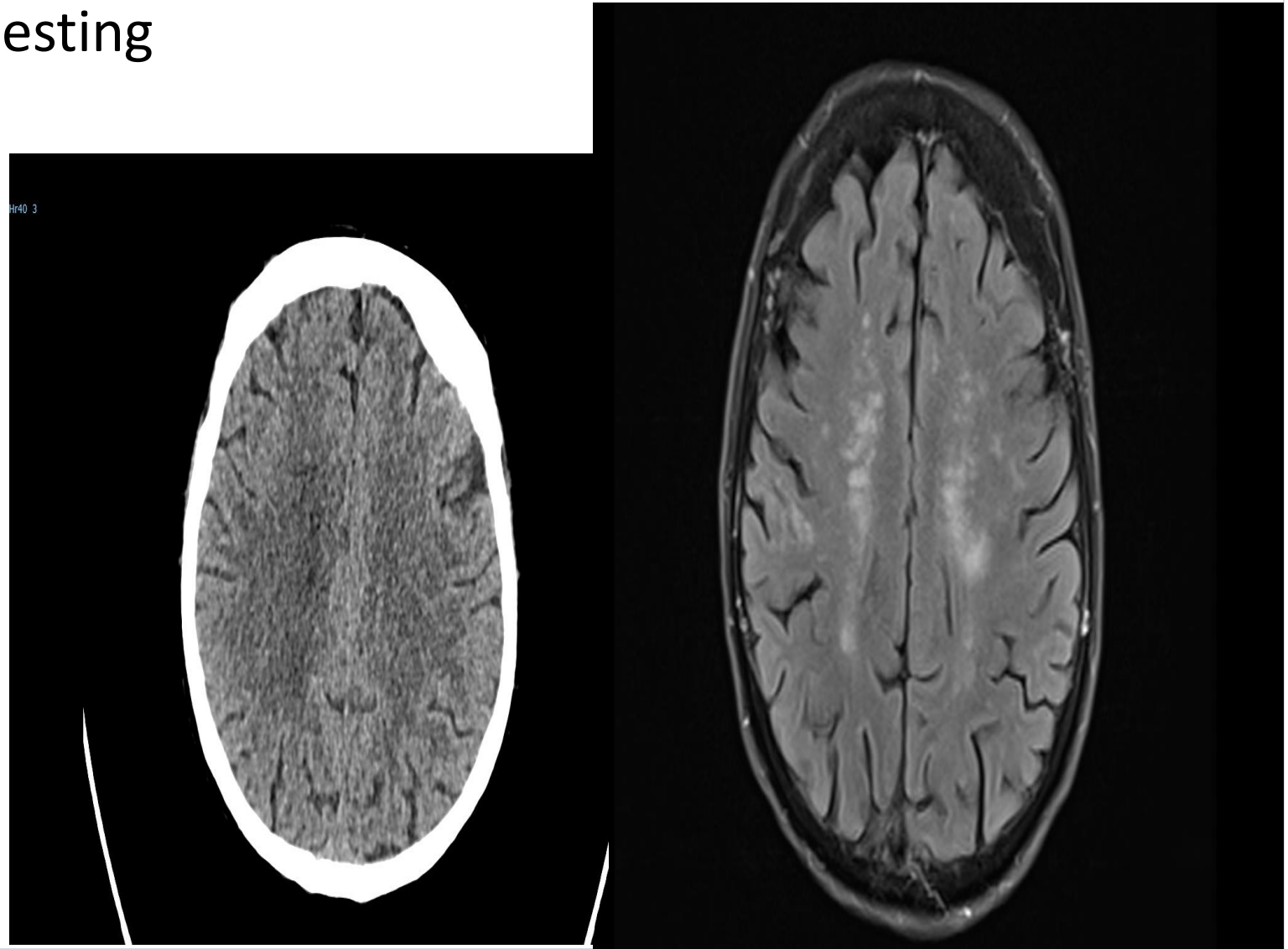
The quest for person-centred care

Also inside this issue:

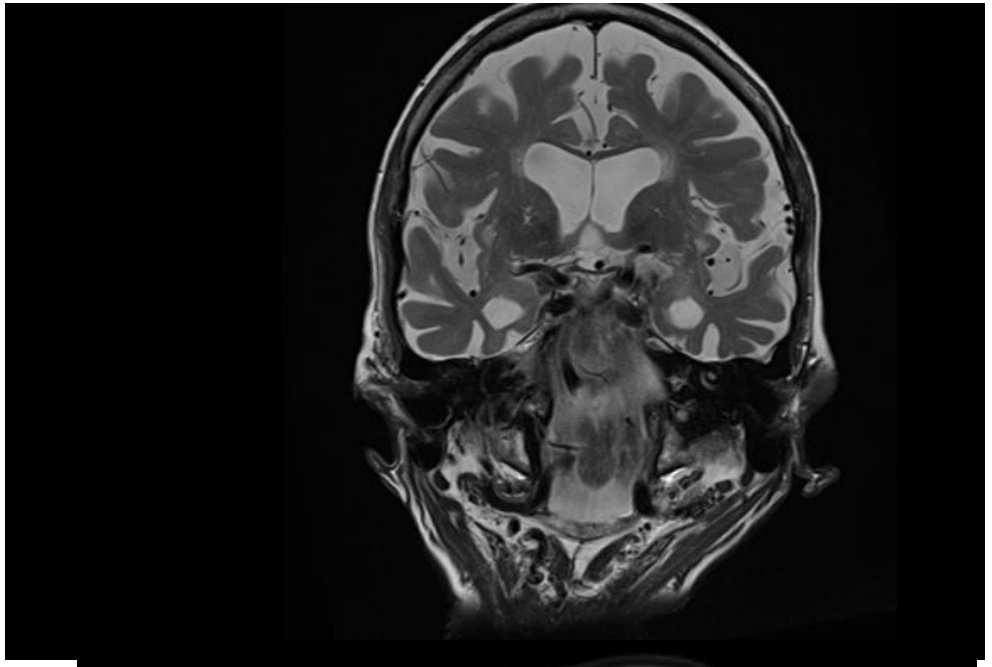
- Fun and playfulness
- A new communication tool
- Fronto-temporal dementia
- One-page profiles

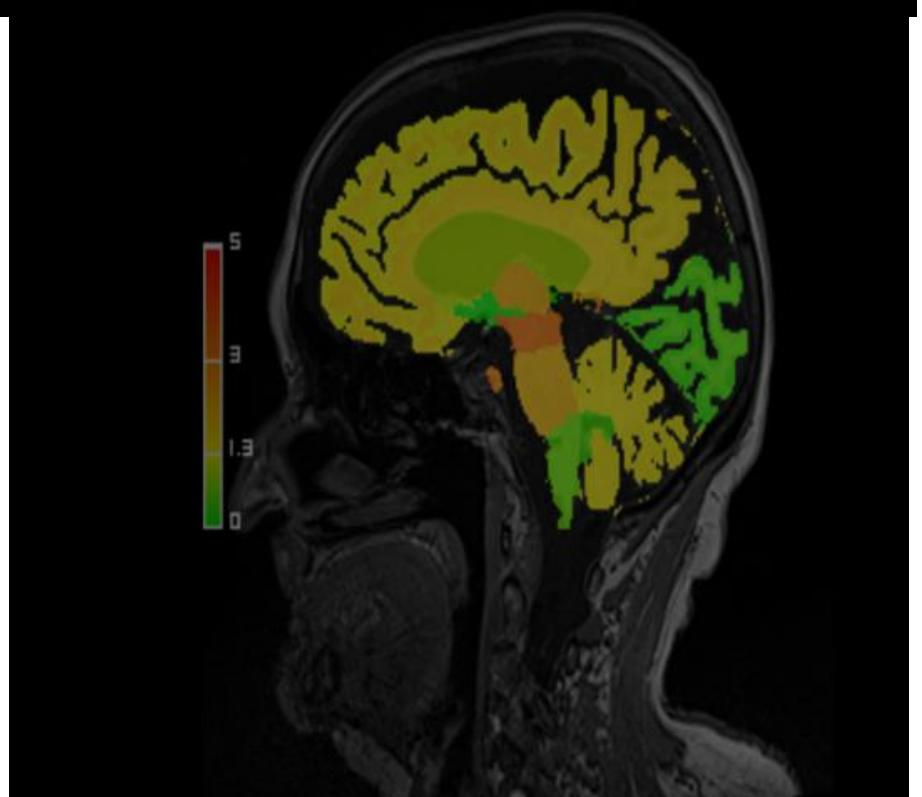
Diagnosis + Type of Dementia

- Clinical Symptomatology
- Cognitive testing
- Imaging
- Genetic
- Autopsy
- Blood test

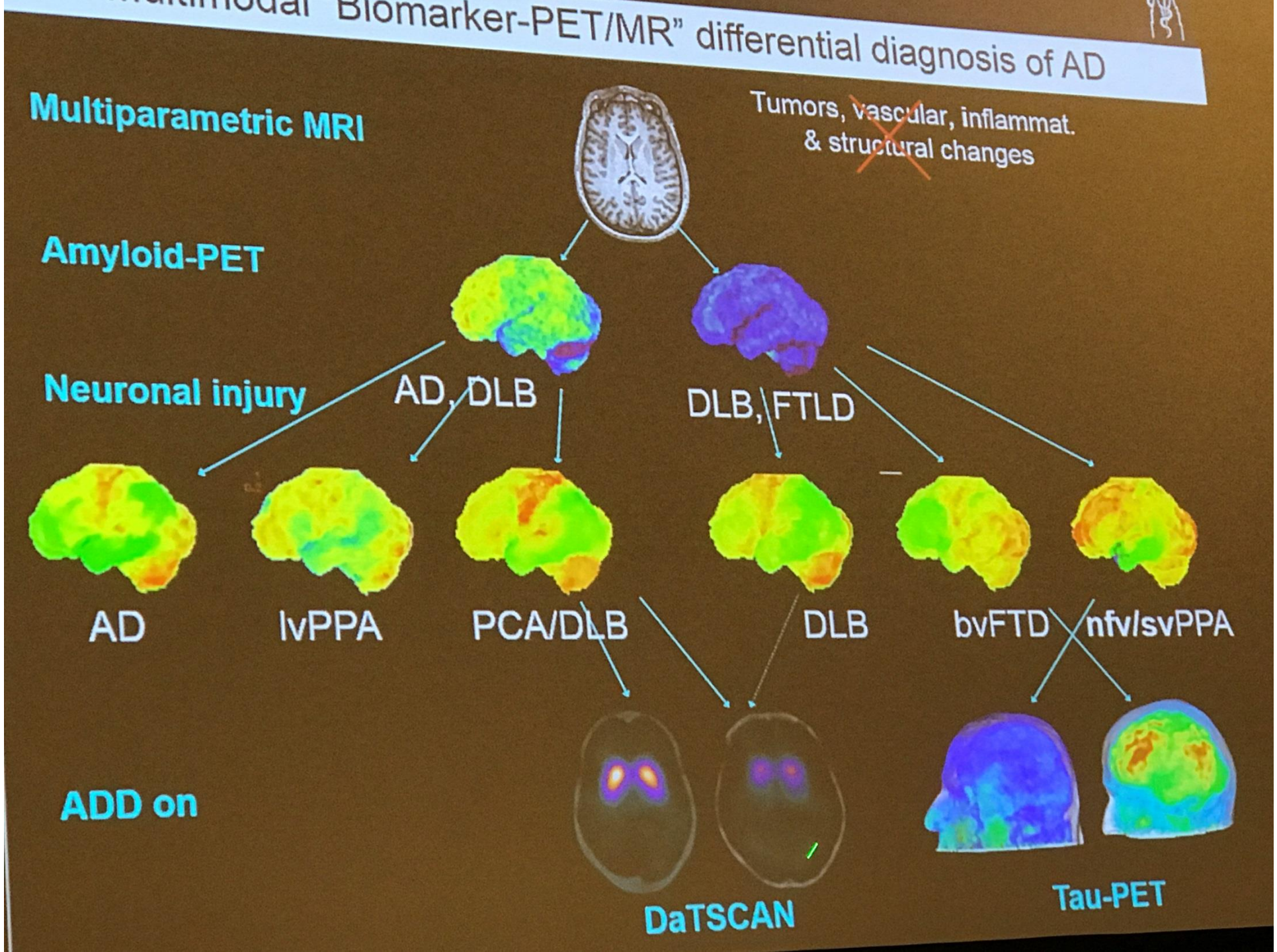


Structural Scan
MRI
Volumetric figures
Diffusion tensor imaging
Stroke SOL detection
white matter tracts





Common measurements :
Global brain volume,
White/gray matter volume,
Cortical thickness,
Amygdala
cingulate cortex volume,
hippocampal volume
(decreased in MDD and schizophrenia)

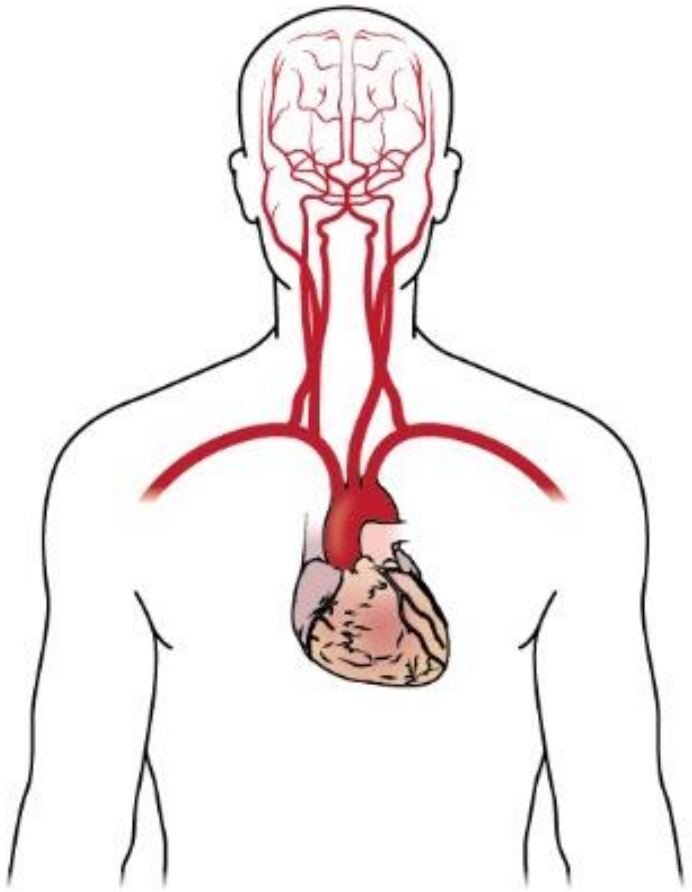

Multimodal "Biomarker-PET/MR" differential diagnosis of AD
Multiparametric MRI
Tumors, vascular, inflammat.
& structural changes
Amyloid-PET
Neuronal injury
AD, DLB
DLB, FTLD
AD
lvPPA
PCA/DLB
DLB
bvFTD
nfv/svPPA
ADD on
DaTSCAN
Tau-PET

Vascular Contributions to Cognitive Impairment and Dementia (VCID)

Cognitive impairment

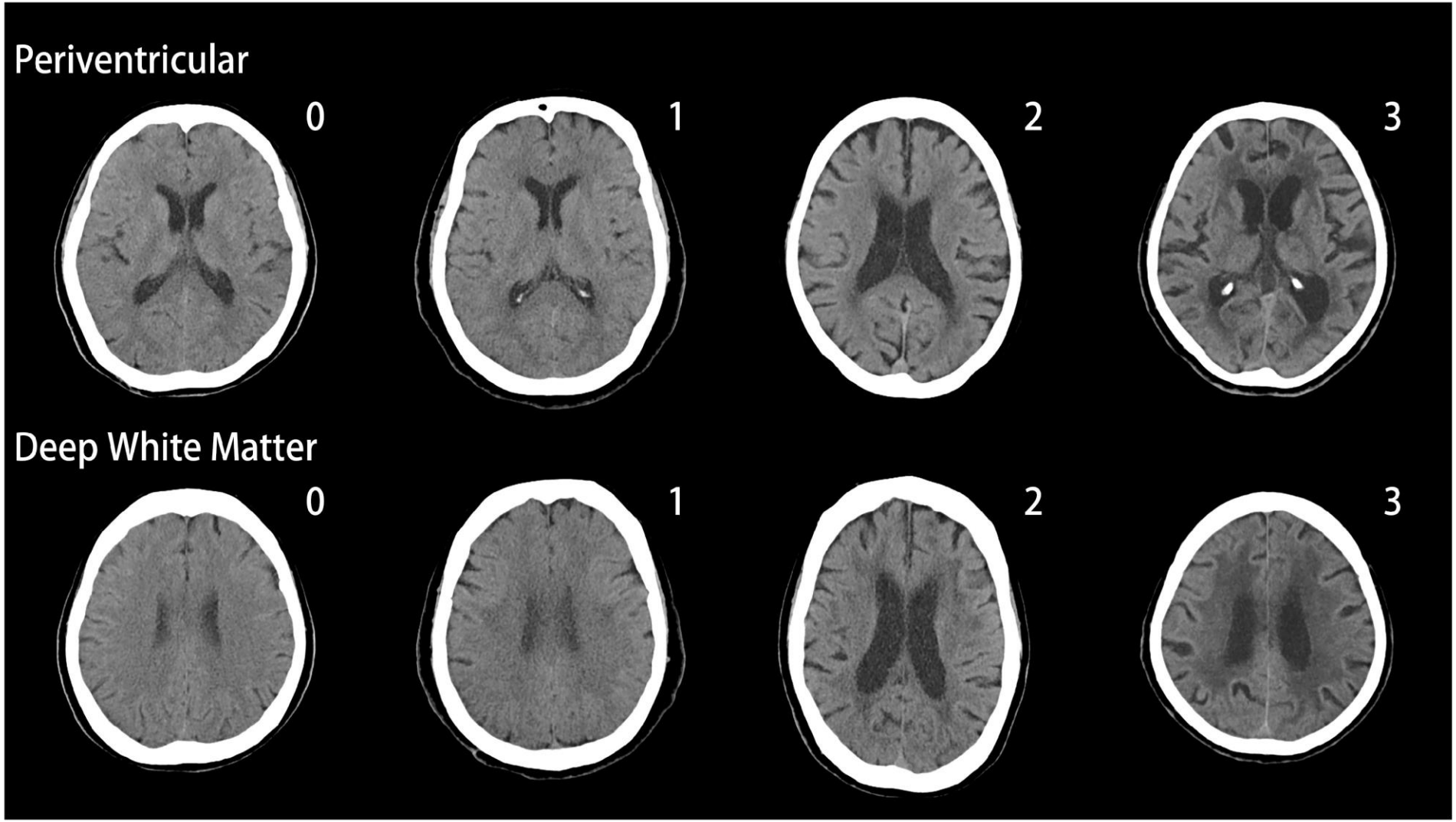
Dementia

- Micro-infarct
- Micro-bleed
- Silent stroke
- Cardiac disease
- Transient ischemic attack (TIA)
- Small vessel ischemic stroke
- CADASIL
- Small vessel hemorrhagic stroke
- Cerebral amyloid angiopathy (CAA)
- Large vessel ischemic stroke
- Large vessel hemorrhagic stroke

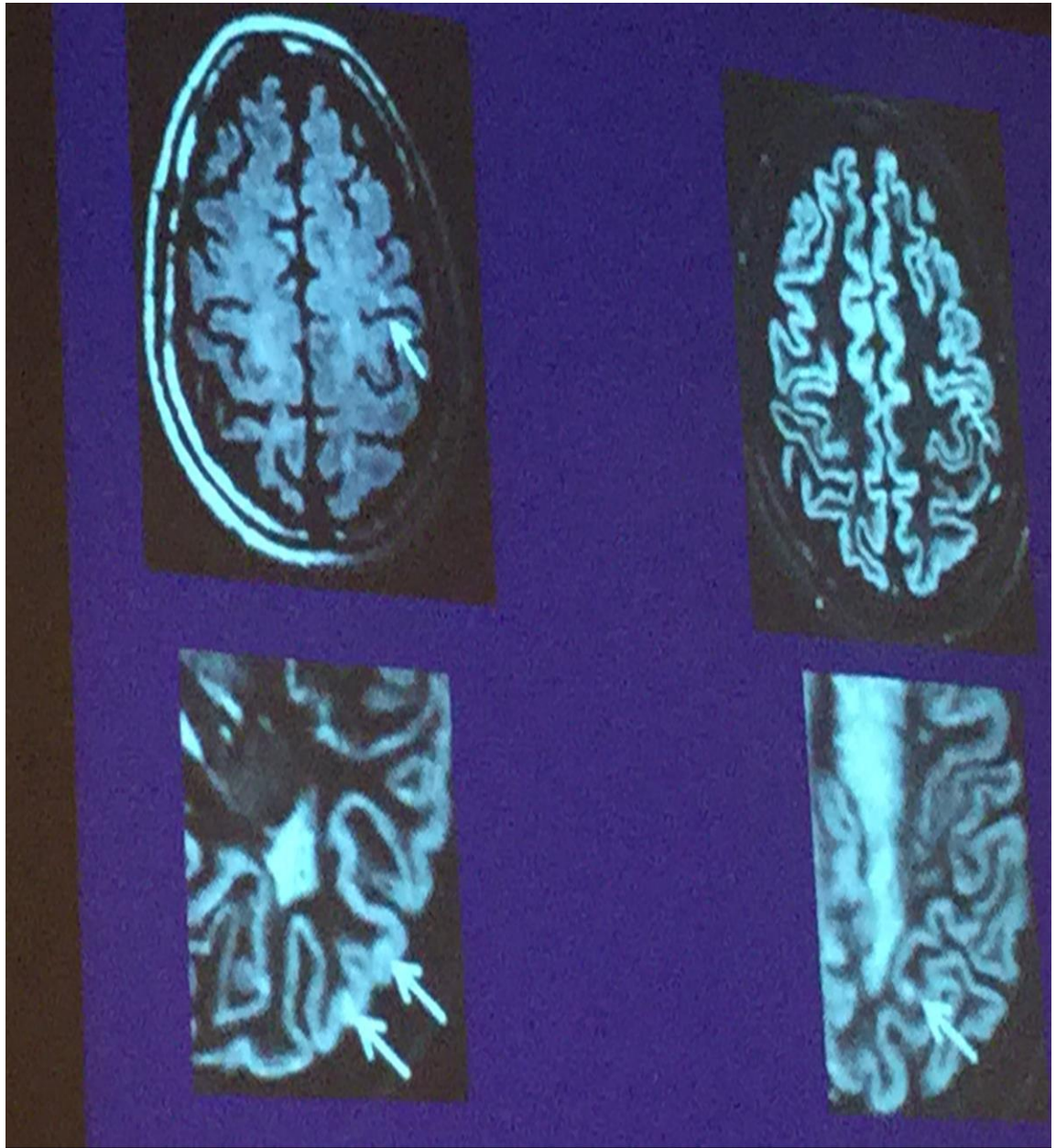


NIH National Institute of Neurological Disorders and Stroke

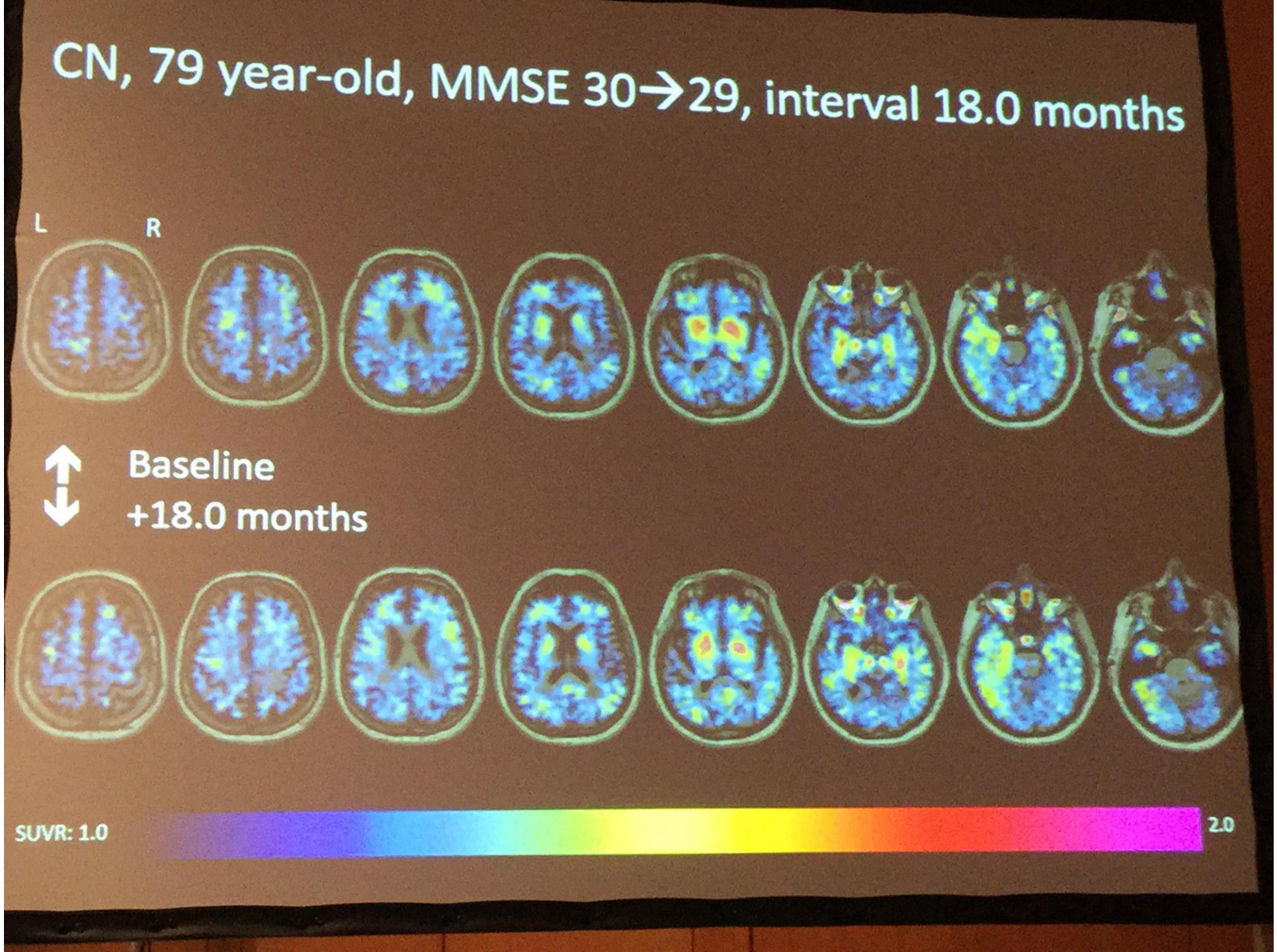
Small vessel disease- Subcortical degeneration
White matter changes modified Fazekas



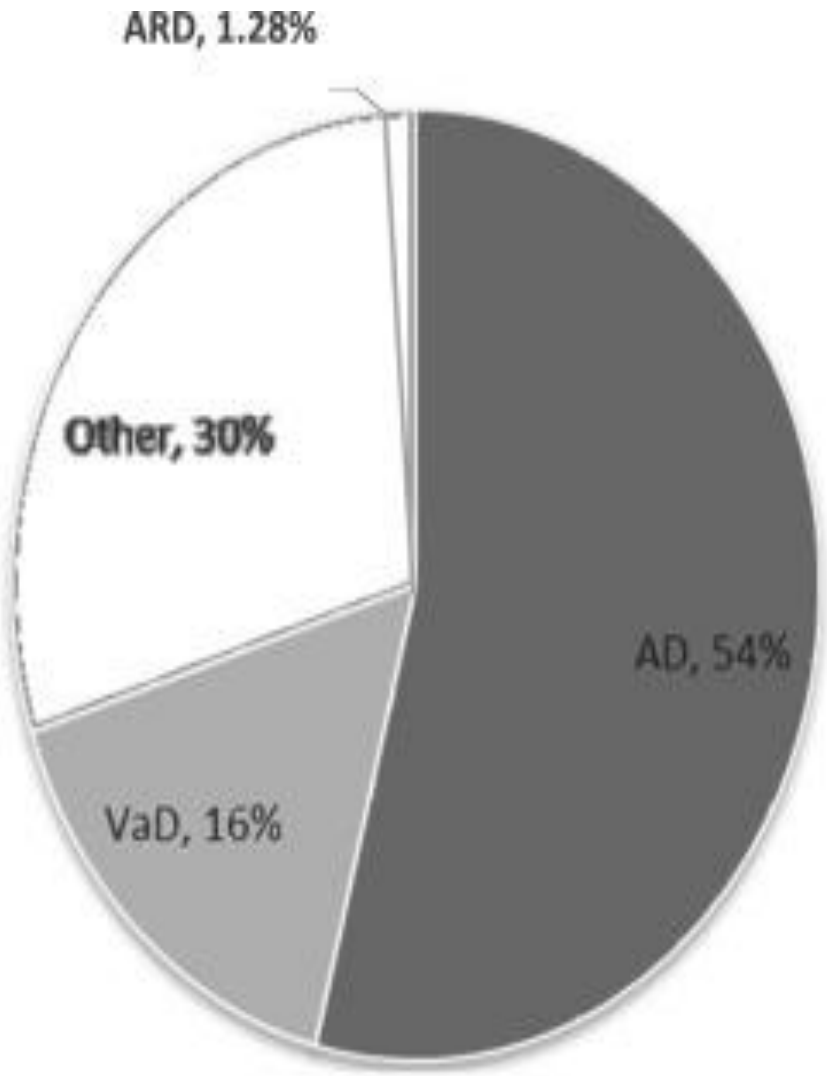
The right diagnosis

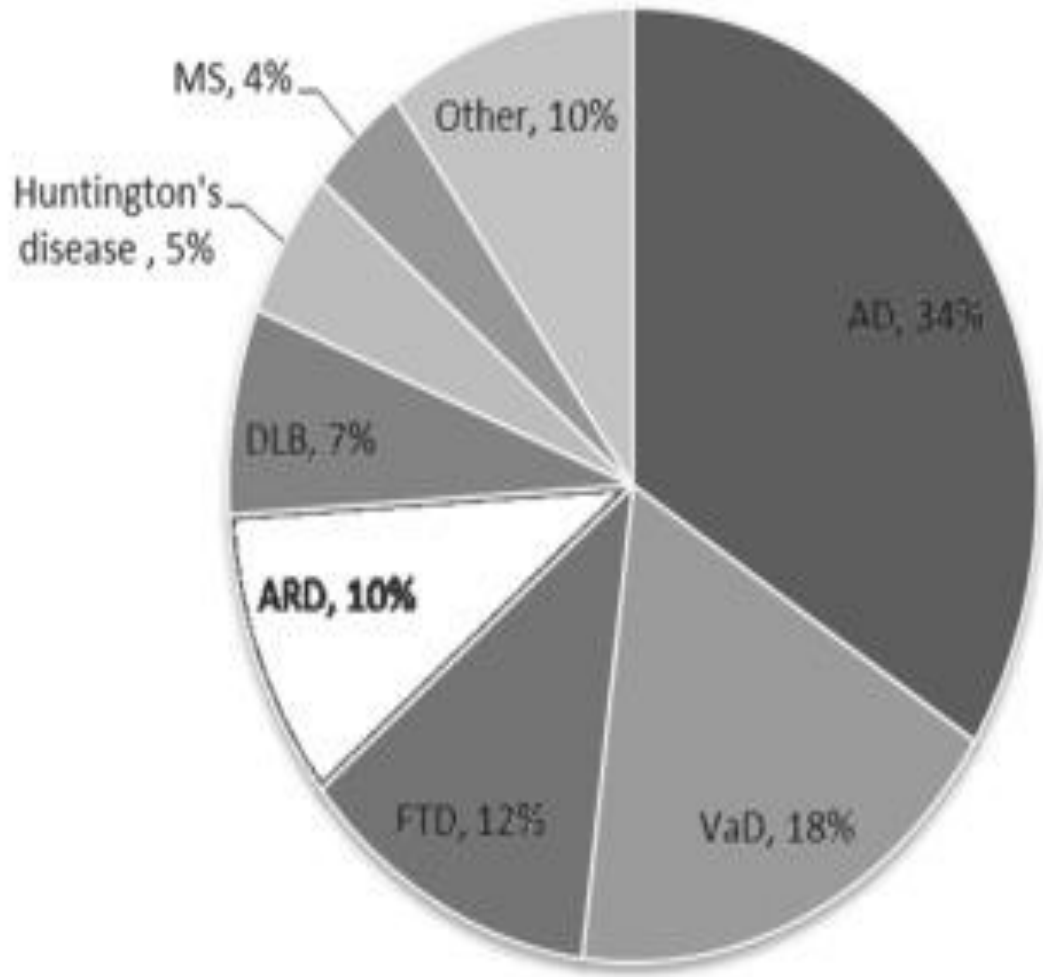


- Suitability for Memory enhancers
- Planning for the future
- Affairs management
- Bucket list in order
- Genetic testing


CN, 79 year-old, MMSE 30→29, interval 18.0 months
L
R
Baseline
+18.0 months
SUVR: 1.0
2.0

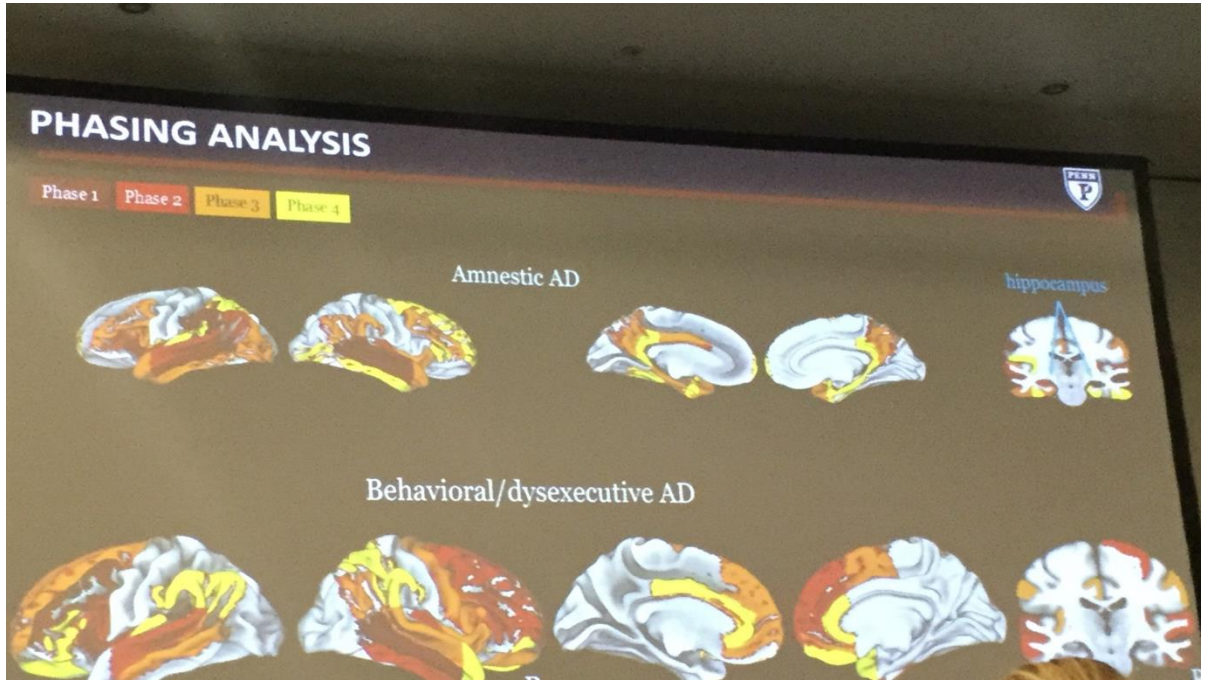
Alcohol-Related Dementia: A Systemic Review of Epidemiological Studies Jul2017





The near future Diagnosis

Tammy, said the PrecivityAD™ blood test would have saved her a decade of “futile trips to doctors who chalked up her symptoms to depression, anxiety or menopause before a $5,000 brain scan last year finally showed she had Alzheimer’s.”



Pseudo-dementia

Pseudo-pseudo-dementia

Pseudo-Depression

- Overlapping Low Mood
- Beliefs of worthless # Indifference
- Behavioural passivity/ refusal
- Appetite, Sleep, Libido changes
- Anxiety
- Response to antidepressant
- Fluctuation of inactivity

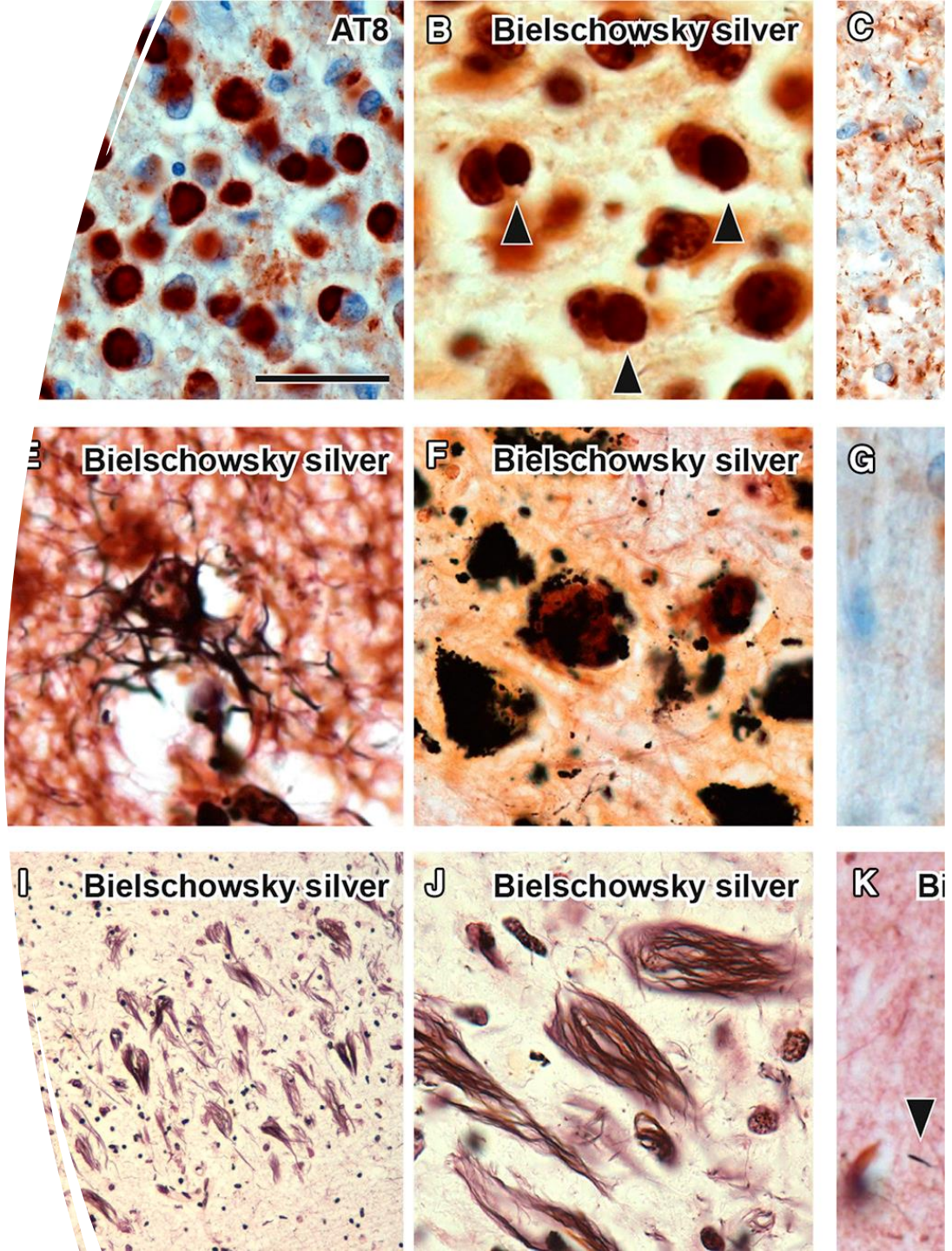
Henry Bodarty Alzheimer's and Dementia Journal Apr2020

Atypical Alzheimer's Cholinergic deficiency +

Posterior Cortical atrophy	Frontal variant AD TDP-43	Lewy Body D
• Visual clarity • Verbal and written language deficits • Sit to stand • Complex tasks problems	• Aberrant motor behaviour • Apathy	• Anxiety • Irritability • Hallucinations • Sleep disturbance

FTLD-tau types

- bvFTD
- lFTD
- PiD
- CBS
- PSP:P, RS, C types
- Pure Akinesia Gait failure PAGF
- Progressive Non Fluent Aphasia nfvPPA
- SvPPA
- lvPPA



Pathology of FTLD syndromes

Relationship between Clinical Features, Pathology and Proteinopathies in FTLD sub-syndromes

[modified from Cairns et al, 2007 and Josephs 2008]

	Frontotemporal Lobar Degeneration Syndromes							
Sub-syndrome	bvFTD		SD	PNFA		FTD-MND	FTDP-17 [*MAPT* or *GRN* mutations]	
Clinical features	Predominantly behavioural		Predom. language	Predominantly language		Behavioural Language + MND	Behavioural Language +/- EPS	
Histopathology	PiD-CBD-PSP-types	FTLD-U types 1-3	FTLD-U types 1-3	PiD-CBD-PSP-types	FTLD-U types 1-3	FTLD-U types 1-3	Tau +ve neuronal / glial inclusions	FTLD-U type 3
Molecular pathology	Tau	TDP-43	TDP-43	Tau	TDP-43	TDP-43	Tau	TDP-43

Pick's disease

Atypical Cognitive Symptoms

- Behavioural Psychological symptoms

Bradyphrenia

Slow responses

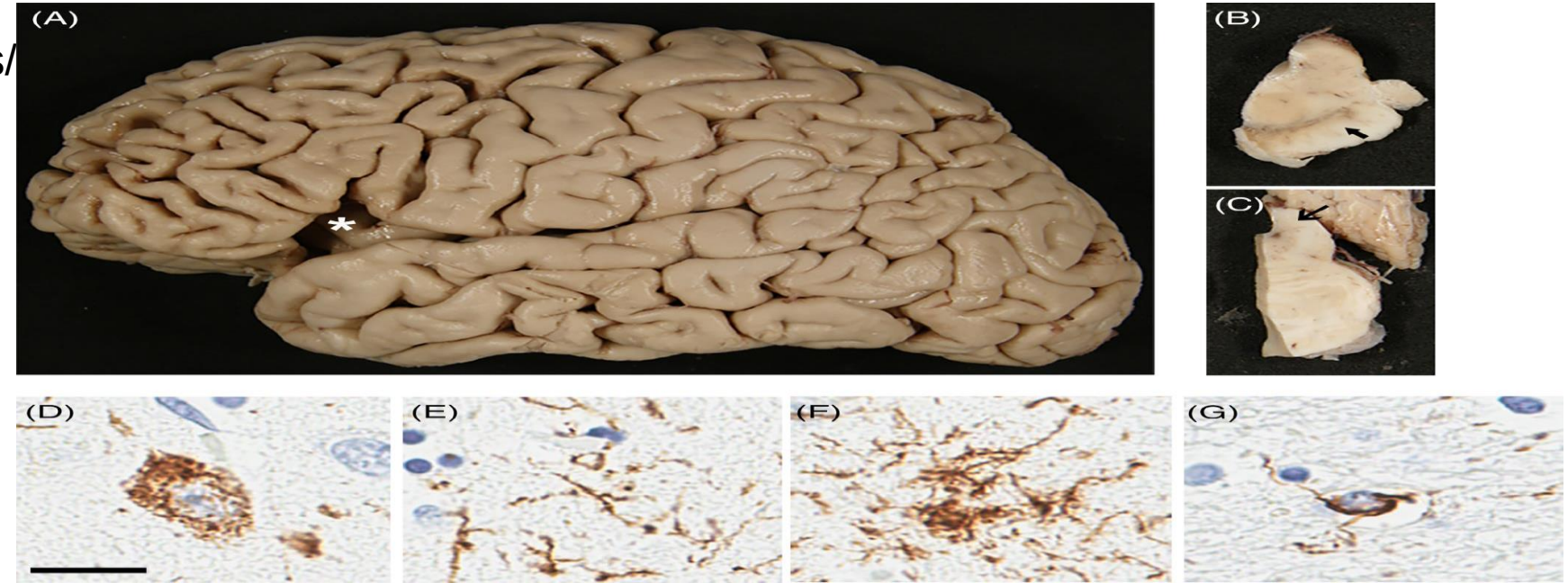
Memory recall

Language disorder

Disinhibition

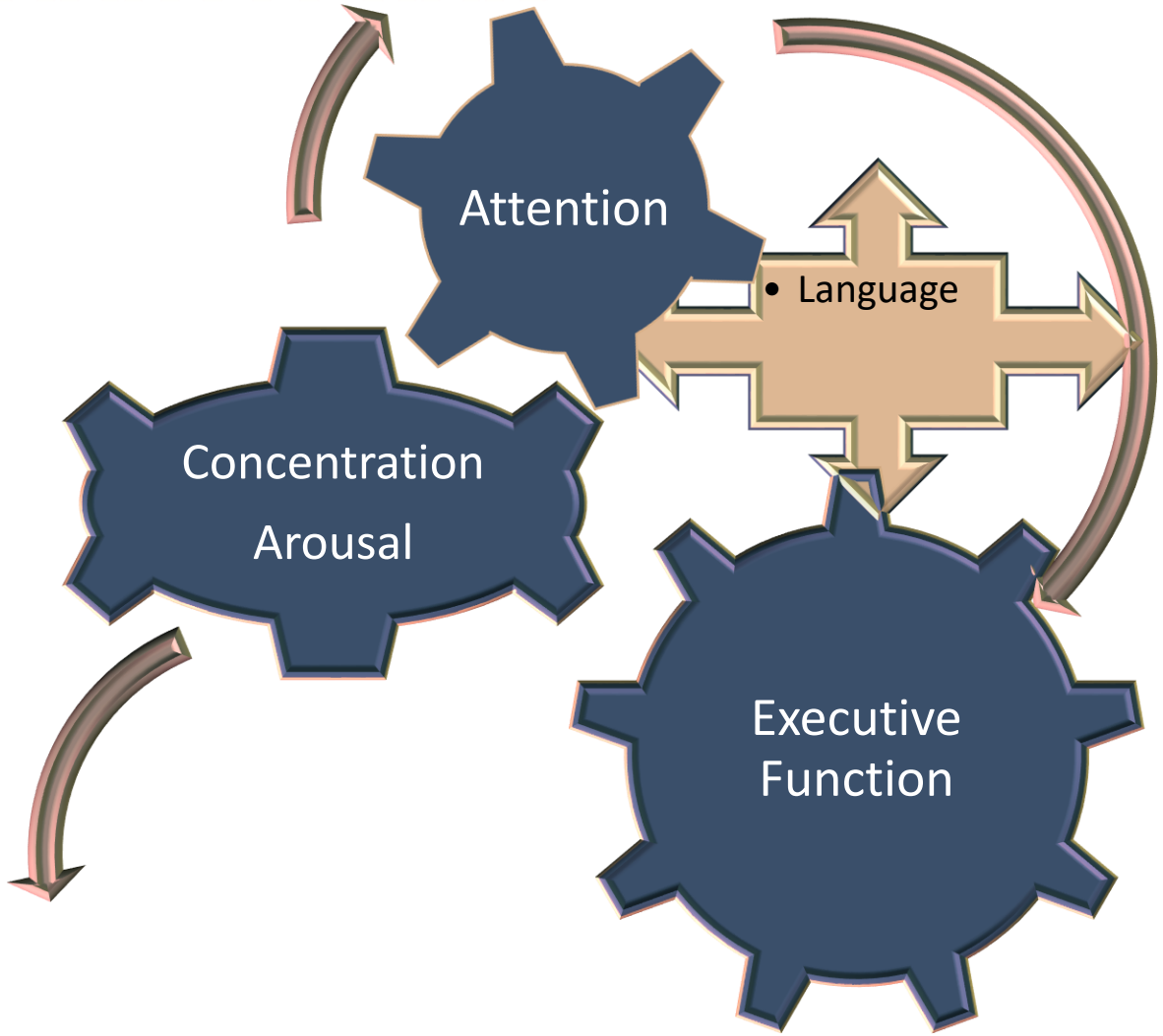
Apathy -Inertia

Motor deficits/



COGNITIVE + NON-COGNITIVE SYMPTOMS

Short term	Memory
	Calculation
	Multitasking
	Visuo-spatial
	Verbal recall
	Abstract thinking
	Verbal fluency



Cognition variability

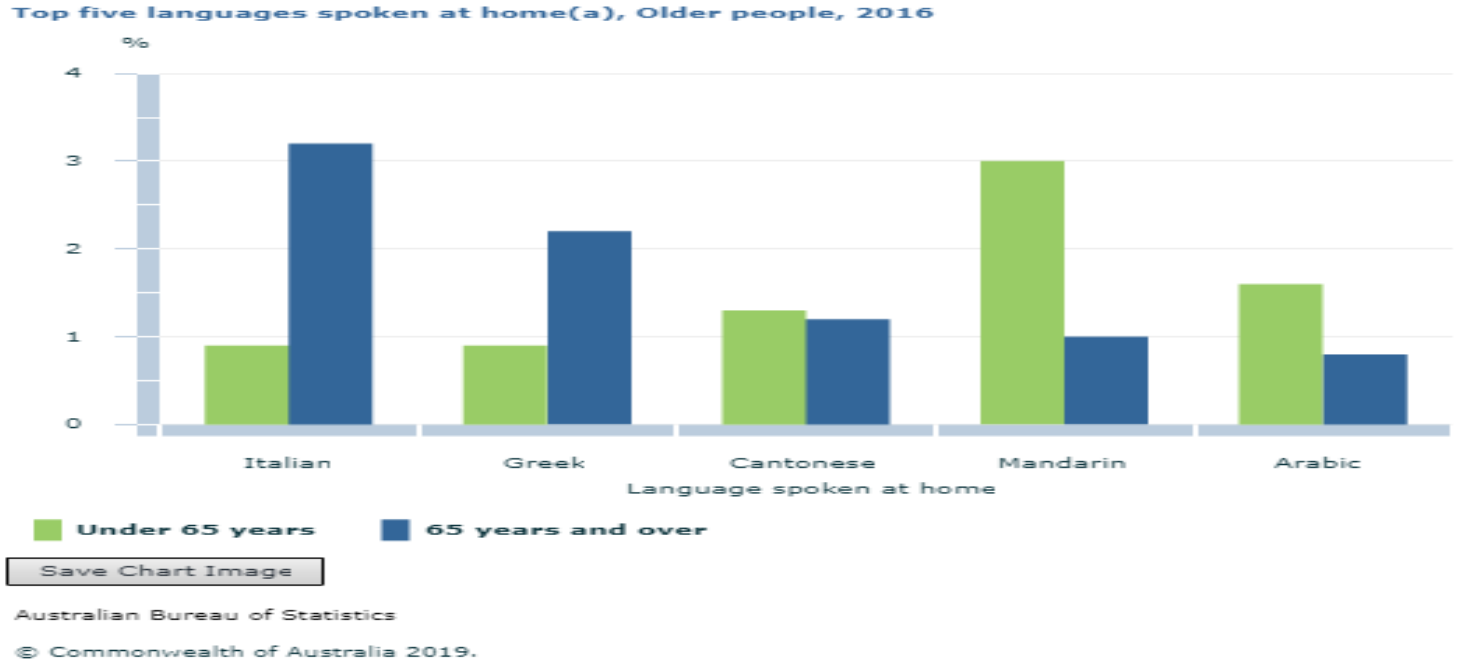
- Characteristics of a person actions and reactions with the environment

Genetics

Developmental opportunities

Culture

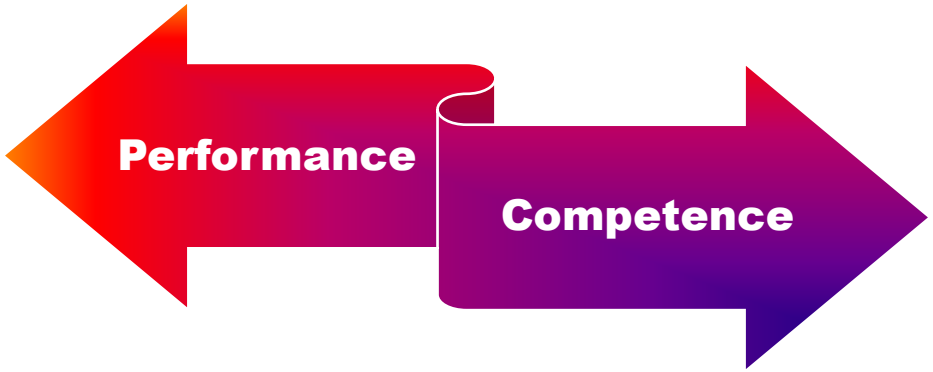
Era



Diagnostic Tools for Cognition

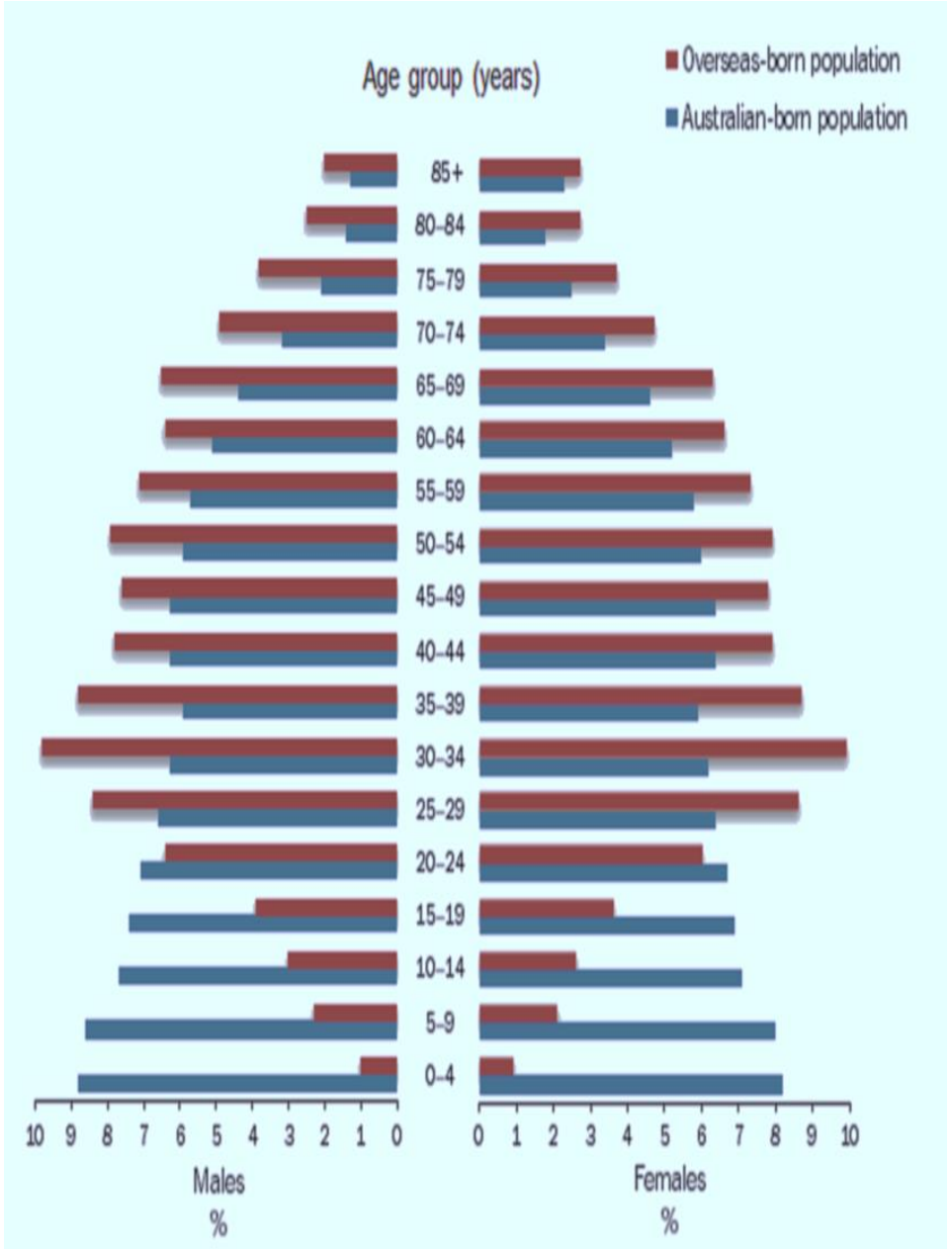
- MMSE CLOCK ADAS-Cog Adenbrook MOCA CAMCOG Digit test

- Reliable
- Easily Applicable
- **Quick**
- **Sensitive**
- **Specific**
- **Simple training**



Scoring / Performance

- Educational Level
- Cultural setting
- Skills
- Emotional status
- Sensory problems
- Physical problems
- Neurological problems

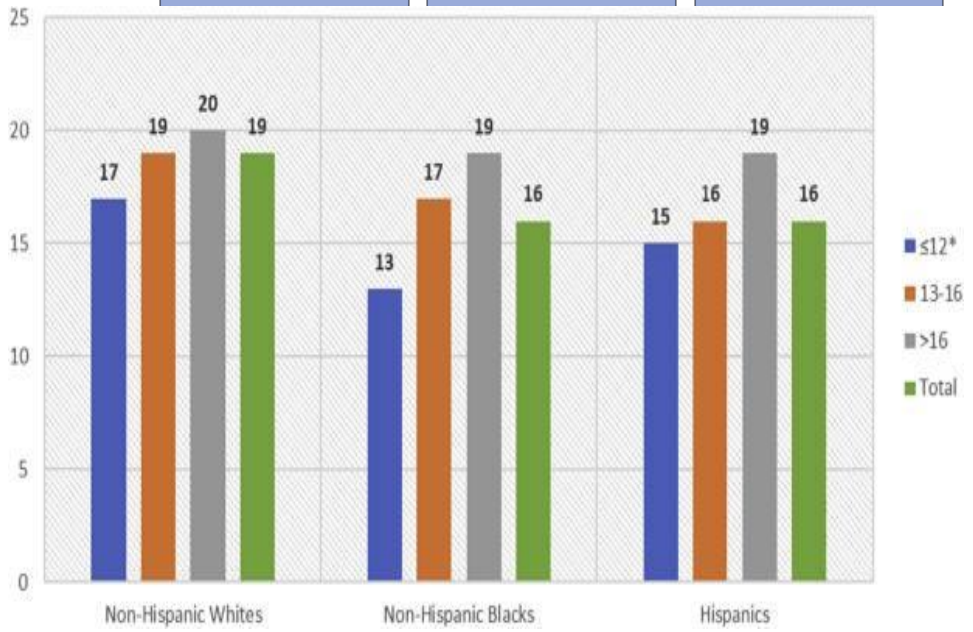


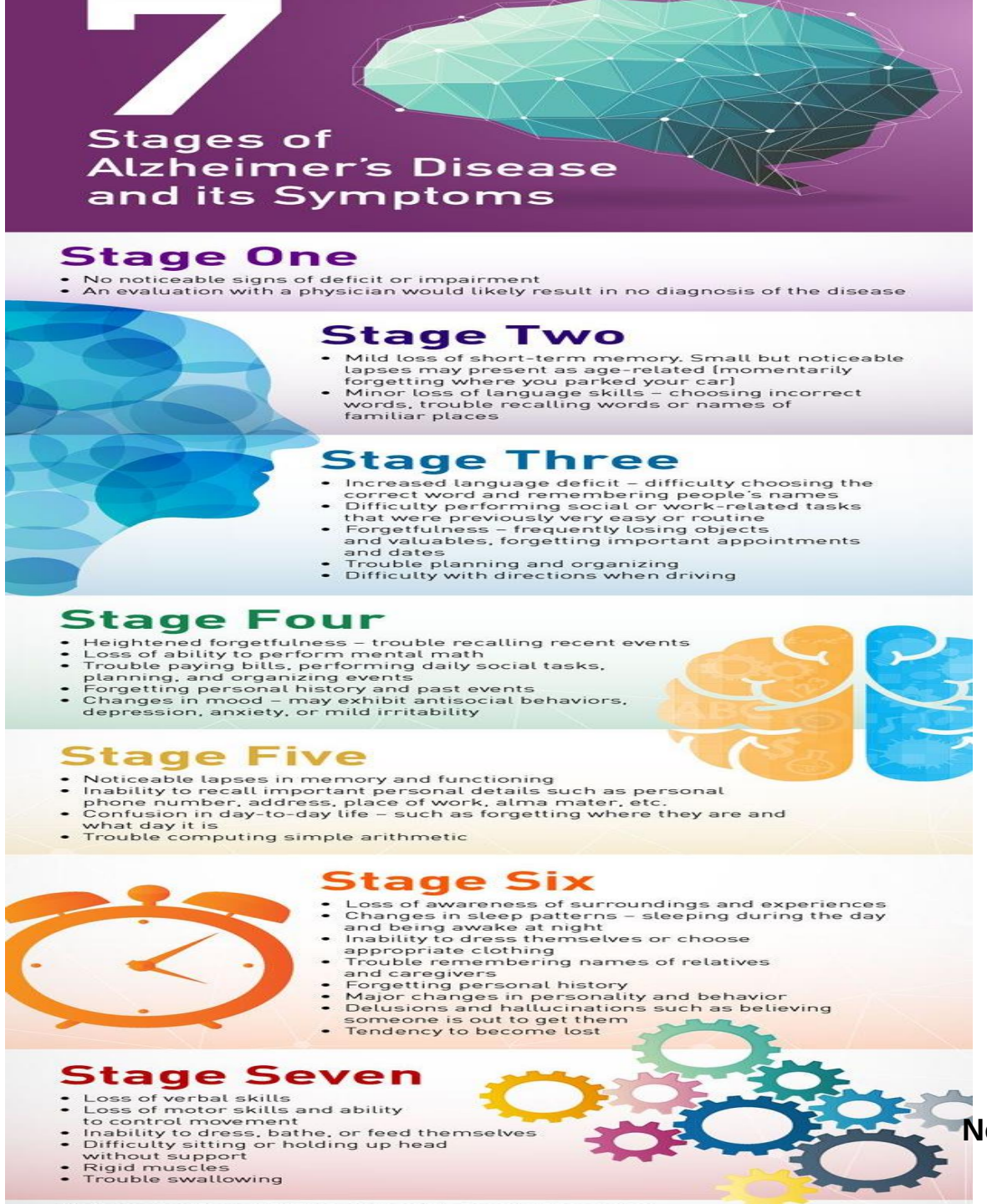
SCORE	SEVERITY	STAGE
30-26	Could be normal	Could be normal
25-20	Mild deficits	Early Dementia
19-10	Moderate to severe	Middle to later
9-0	severe	late

>26
- Normal
- 12yrs. Education
- Sensitivity 89.5-94%

25-20
- MCI
- Sensitivity
- 81.6%

<19
- Dementia
- Sensitivity
- 82-85%





Time line of disease progression

Mild short term memory loss

Severe memory loss

Less independent

Forgetting timing days

Trouble doing simple arithmetic's

No day-to day recall

No Awareness persons surroundings

Help with personal care

Behaviours

Non Verbal

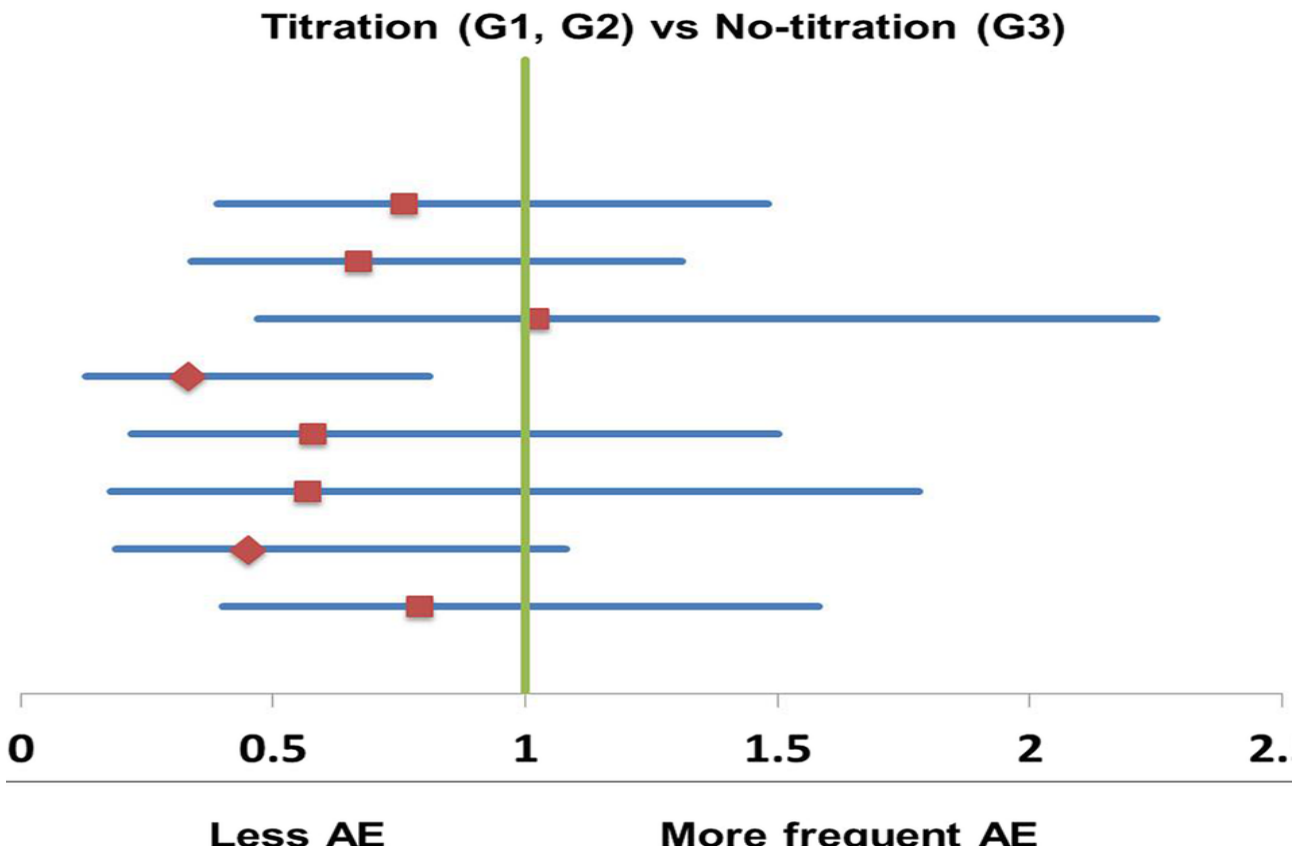
Non mobile or frequent falls

Impaired swallowing

Drug therapies
Cholinergic Replacement
NMDA control
Symptoms control with Psychotropics

Memory Enhancers
Cholinesterase inhibitors
NMDA Inh Memantine

1. GI symptoms: nausea vomiting Diarrheal anorexia
2. Weight Loss
3. Dizziness / generalised weakness
4. Urinary Frequency
5. Insomnia
6. Heart block/ bradycardia



CholInh +/- Memantine?
DOMINO Trial

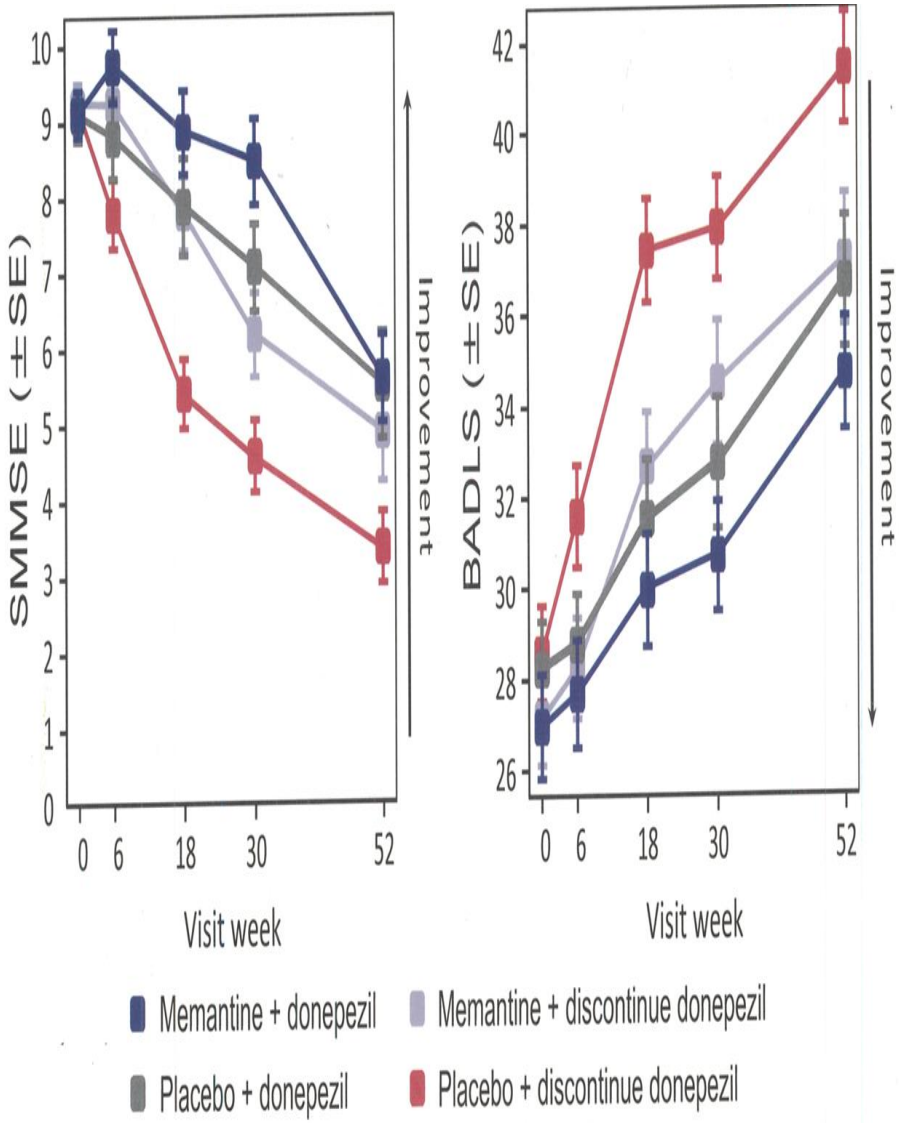
Original Article

Donepezil and Memantine for Moderate-to-Severe Alzheimer's Disease

Robert Howard, M.D., Rupert McShane, F.R.C.Psych., James Lindesay, D.M., Craig Ritchie, M.D., Ph.D., Ashley Baldwin, M.R.C.Psych., Robert Barber, M.D., Alistair Burns, F.R.C.Psych., Tom Dening, F.R.C.Psych., David Findlay, M.B., Ch.B., Clive Holmes, Ph.D., Alan Hughes, M.B., Ch.B., Robin Jacoby, D.M., Rob Jones, M.B., Ch.B., Roy Jones, M.B., Ian McKeith, F.Med.Sc., Ajay Macharouthu, M.R.C.Psych., John O'Brien, D.M., Peter Passmore, M.D., Bart Sheehan, M.D., Edmund Juszczak, M.Sc., Cornelius Katona, M.D., Robert Hills, D.Phil., Martin Knapp, Ph.D., Clive Ballard, M.D., Richard Brown, Ph.D., Sube Banerjee, M.D., Caroline Onions, P.G.Dip., Mary Griffin, R.G.N., Jessica Adams, B.Sc., Richard Gray, M.Sc., Tony Johnson, Ph.D., Peter Bentham, M.B., Ch.B., and Patrick Phillips, Ph.D.

N Engl J Med
Volume 366(10):893-903
March 8, 2012

The NEW ENGLAND JOURNAL of MEDICINE



Course of neuropsychiatric symptoms in dementia a 5 year longitudinal study

Geriatric Psychiatry. Vol33, Is10,Oct 2018 Pg1361-69

Neuropsychiatric symptoms were common at baseline, and only a moderate increase in total score

97% scored ≥16, **49% scored ≥36**

Most common symptoms: **Apathy 83%**

Depression 63%

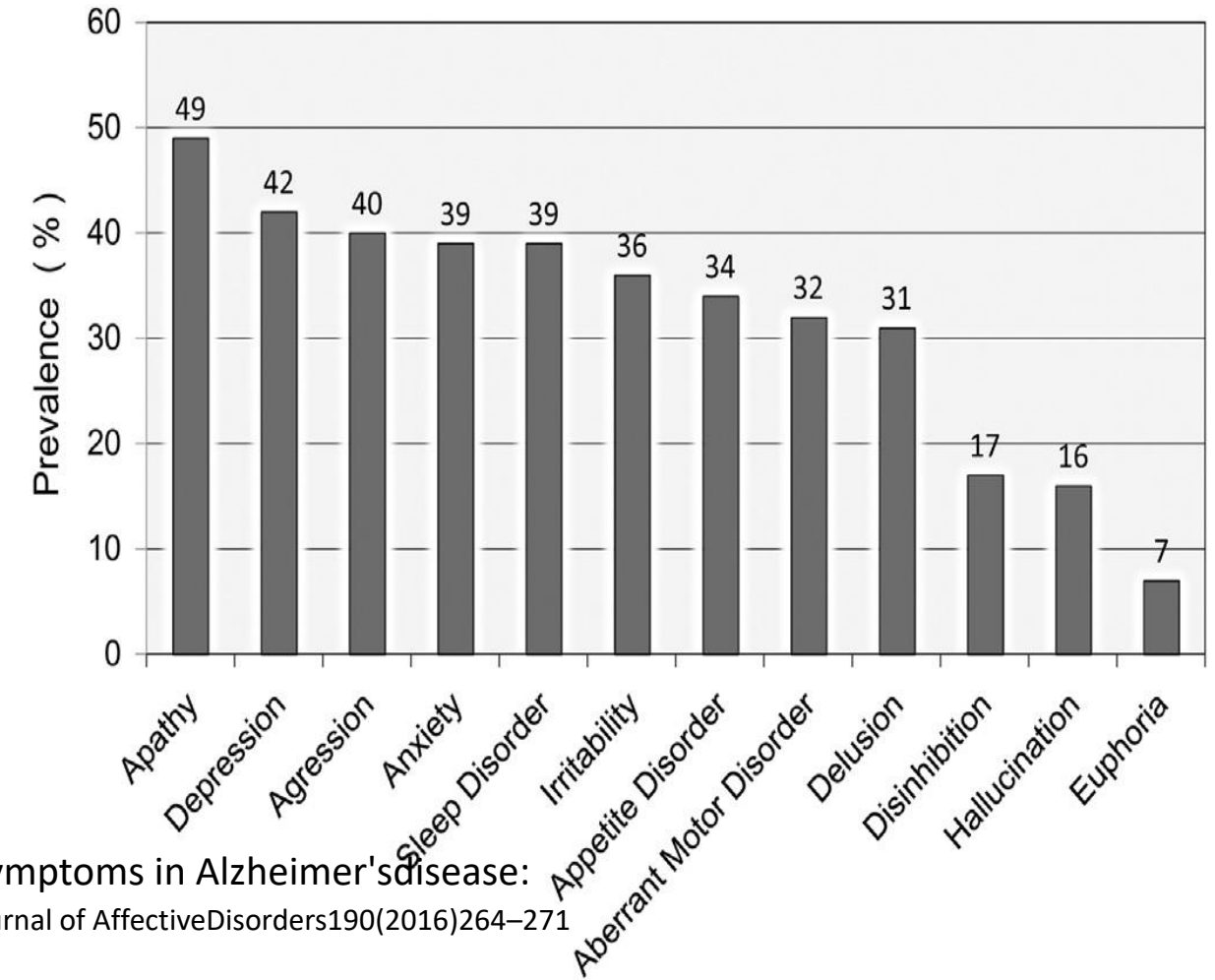
Appetite 63%

Aberrant motor behaviour 60%

- Cognitive decline was associated with higher NPI tot. score and several NPI items
- Lewy body dementia was associated with higher NPI total score and psychotic symptoms.
- Alzheimer's disease was associated with increase in apathy.

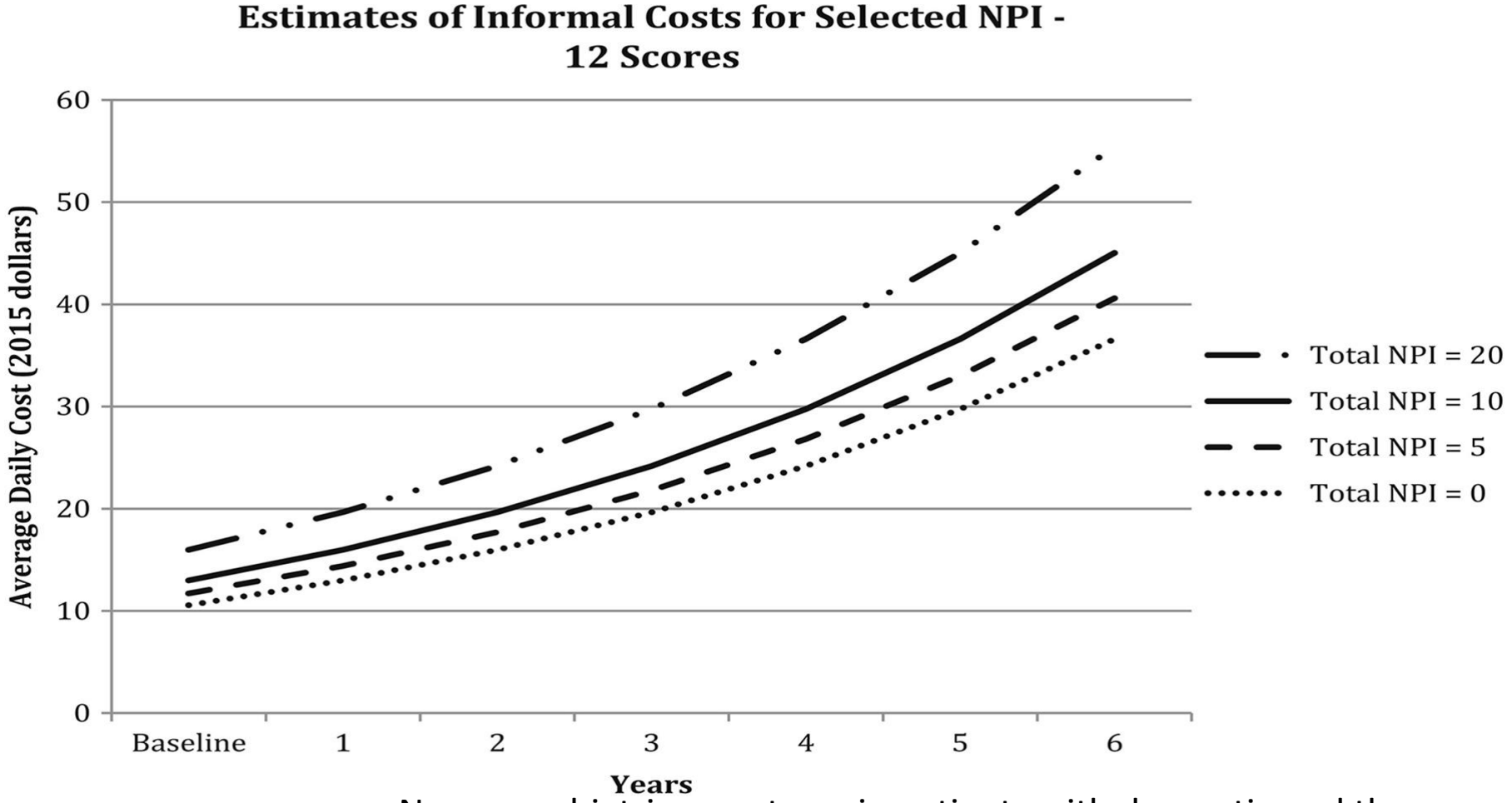
HIGH PREVALENCE BEHAVIOURS

Depression
Anxiety
Apathy
Irritability
Agitation
Aggression
Wandering



The prevalence of neuropsychiatric symptoms in Alzheimer'sdisease: Systematicreviewandmeta-analysis Journal of AffectiveDisorders190(2016)264–271

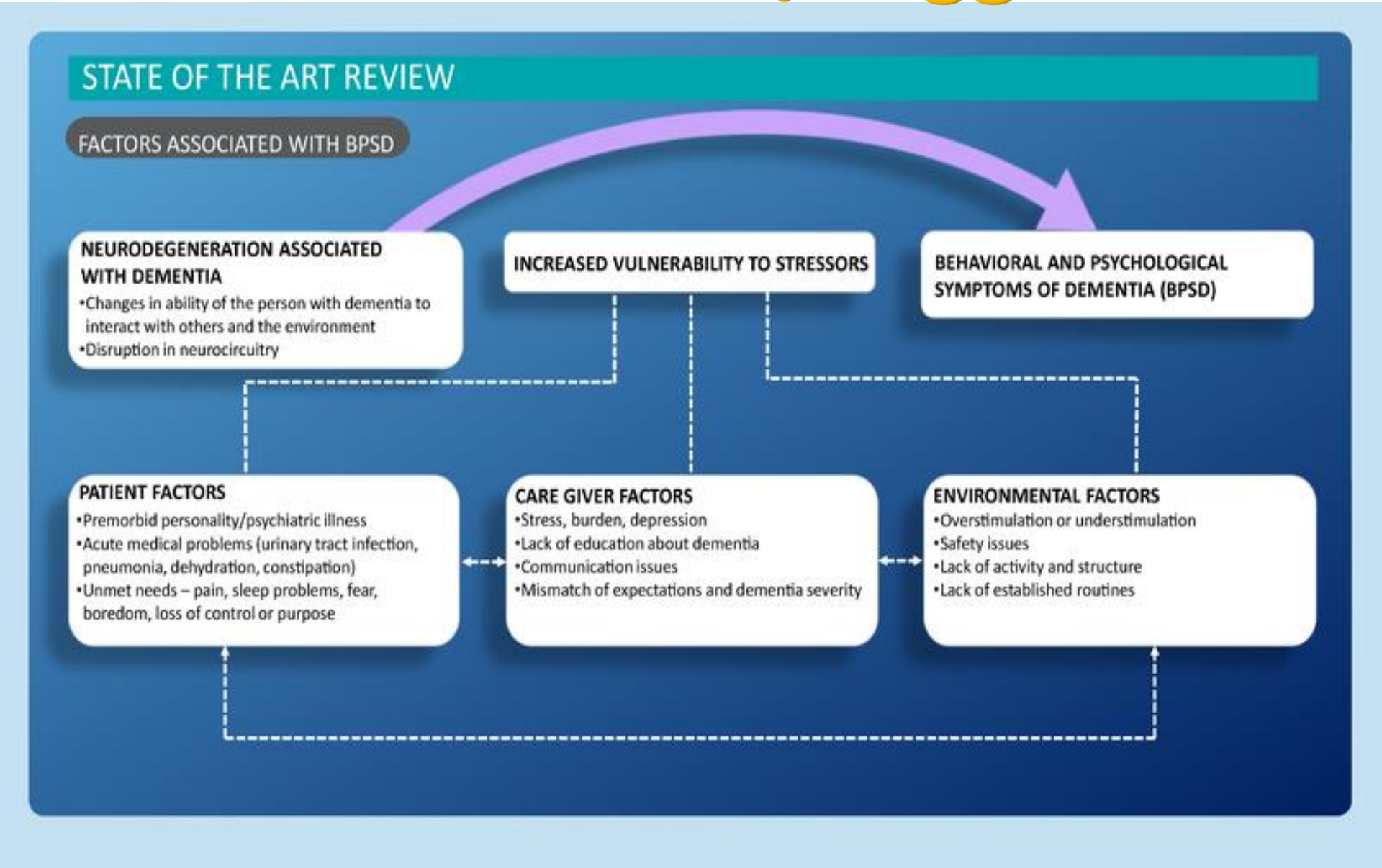
increasing costs over time and with increasing dementia severity (decreasing Mini-Mental State Examination [MMSE] score each year



Neuropsychiatric symptoms in patients with dementia and the longitudinal costs of informal care in the Cache County population

G B Rattinger et al. 2016

Factors associated/trigger BPSD



Emotions

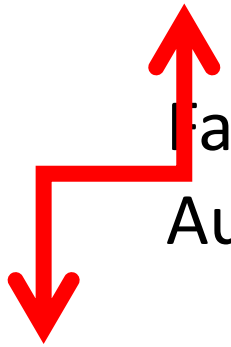
- Primary Reinforcers

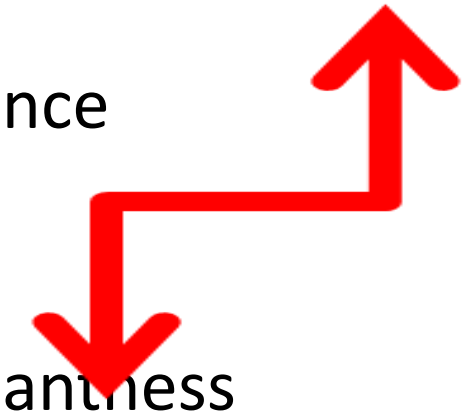
Taste Touch Smell

Facial Expression

Facial Beauty

Auditory Consonance





Pleasantness

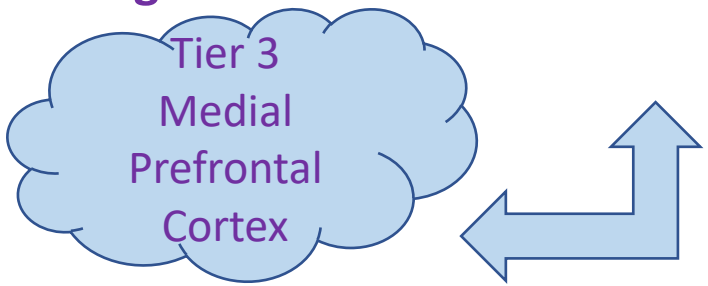
Orbitofrontal Cortex

Amygdala

Tier 2

Value computation

Decision making



Aggression

- ***Personality trait***

Uncontrolled temperament

Impulsiveness

Low empathy

Agreeableness

Conscientiousness

- ***Bipolar I disorder***
- ***Borderline personality disorder 1.6-6%***
- ***ADHD disorder***
- ***Autism spectrum RBFOX1 gene Chr 16***

- ***Heritability 50%***

- ***Alzheimer Disease presents a high occurrence of aggression, estimated to occur in around 40%***

International Encyclopedia of the Social & Behavioral Sciences (Second Edition) 2015, Pages 482-490

Agitation /Aggression

- Pacing nervously
- Rummaging
- Restlessness
- Repetitive movements
- Wandering trying to leave

Excessive Motor activity

- Argumentative
- Bad tempered
- Open conflict with others
- Verbally abusive
- Yelling Screaming
- Using profanity
- Insulting
- Overly critical
- Shut up to others

Verbal aggression

- Resisting care
- Grabbing
- Pushing hitting
- Slamming doors
- Taking things form others
- destroying property
- Scratching
- Biting
- Spitting Shoving slapping Kicking

Physical aggression

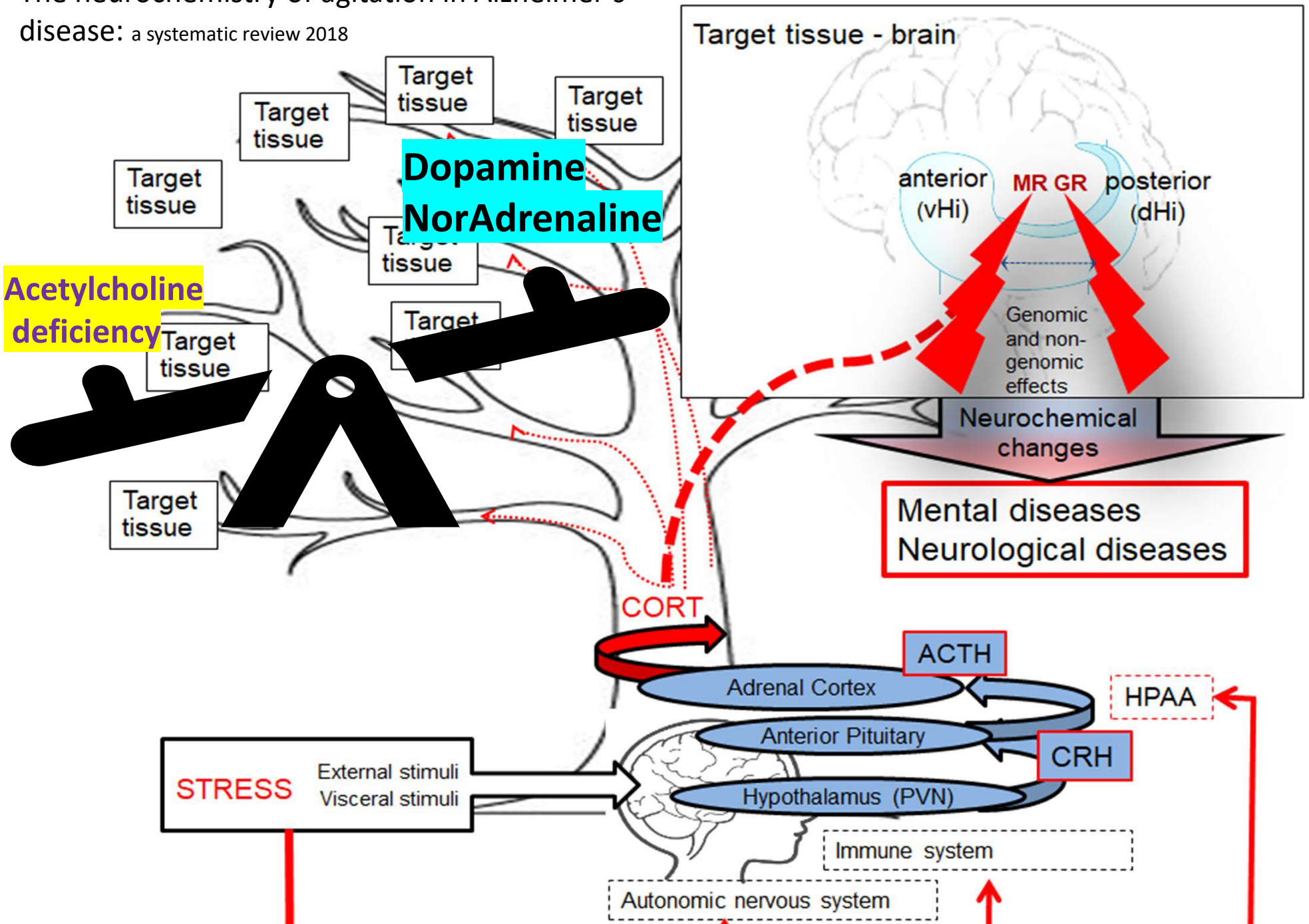
Aggression

- Specific genes influence aggressive behaviours:
- ***Opioid Mu receptor*** Less physical aggressive actions
- Brain activation during aggressive decision making
- Reactivity to social provocation
- Activation of Cortico-limbic structures: Insular cortex Orbito-frontal cortex
- Neuro excitability Anterior Cingulate Pre-frontal dorso lateral Cortex

Behavioral Escalation

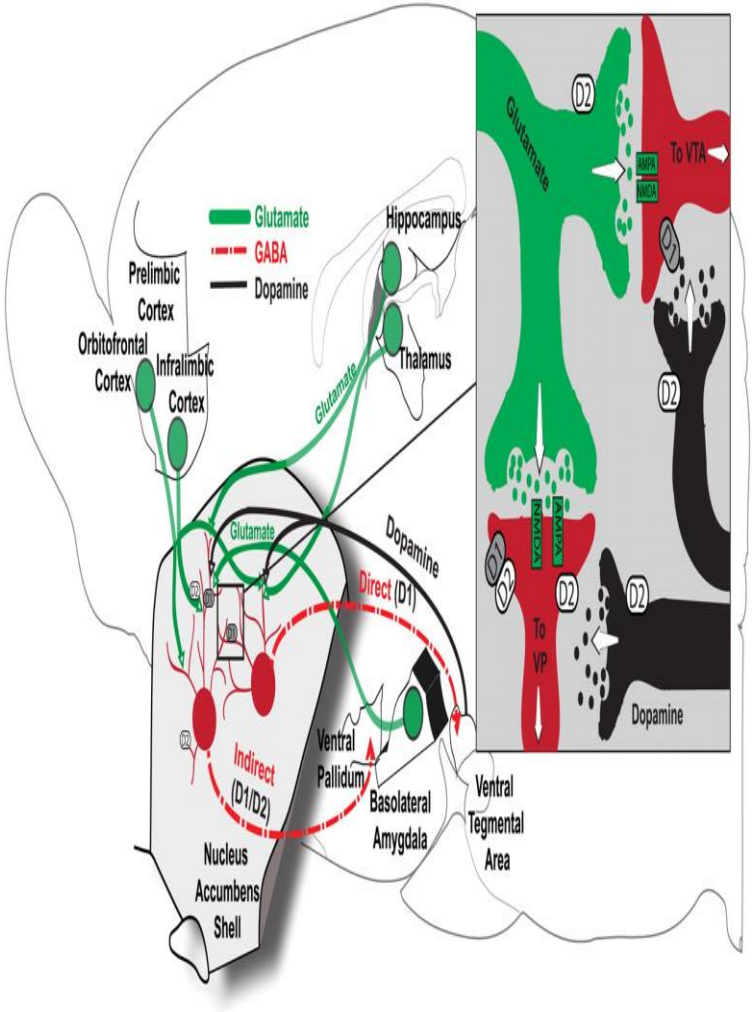
- Restless Behaviours\Irritable
- Wandering
- Rummaging
- Agitation
- Non physical aggression
- Verbal aggression
- **Physical Aggression**

The neurochemistry of agitation in Alzheimer's disease: a systematic review 2018



Neuro-excitation in dementia

- Glutamate/ GABA pathways disruption : Learning
- Memory processing
- Memory consolidation
- Neuroplasticity
- Reduced Energy production
- Tau phosphorylation
- and toxicity



Are premorbid abnormal personality traits associated with behavioural and psychological symptoms in dementia?

J Prior et all, Inter.J.Geriatric psychiatry. Vol31, Is9, Pg 1050-55,Sept 2016

The presence of Clusters A (solitary/paranoid) and C (anxious/dependent) abnormal premorbid personality traits seems to affect the expression of certain behavioural and psychological symptoms in dementia, depression in particular

Personality and behavioural and psychological Symptoms in dementia: Results form the PACO study

The Journal of the Alzheimer's Association, 2018, Vol 14, Iss7, Pg1468

Premorbid Neuroticism was positively correlated with depression, anxiety, irritability, sleep disorders, and the total NPI score. Premorbid conscientiousness was negatively correlated with delusions, apathy, and total NPI score

Premorbid Mood Disorders

- Anxiety 15%
- Depression 6-20%
- Obsessive Compulsive symptoms 1-3%
- Intermitted Explosive Disorder1-2%

- Co existence of more entities
- Overlapping symptoms
- No insight into the magnitude od symptoms

Symptomatology

Action Plan

DESCRIBE

INVESTIGATE

CREATE

EVALUATE

NPI Neuropsychiatric Inventory Worksheet

NPI Neuropsychiatric Inventory Worksheet

Directions: Read all items from the NPI "Instructions for Administration of the NPI". Mark Caregiver' responses on this worksheet before scoring the Frequency, Severity, and Caregiver Distress for each item.

A. DELUSIONS: ☐Yes ☐No ☐N/A
Frequency_____ Severity_____
Distress _____
☐ 1. Fear of harm
☐ 2. Fear of theft
☐ 3. Spousal affair
☐ 4. Phantom boarder
☐ 5. Spouse imposter
☐ 6. House not home
☐ 7. Fear of abandonment
☐ 8. Talks to TV, etc.
☐ 9. Other _____

B. HALLUCINATIONS: ☐Yes ☐No ☐N/A
Frequency_____ Severity_____
Distress _____
☐ 1. Hears voices
☐ 2. Talks to people not there
☐ 3. Sees things not there
☐ 4. Smells things not there
☐ 5. Feels things not there
☐ 6. Unusual taste sensations
☐ 7. Other _____

C. AGITATION/AGGRESSION: ☐Yes ☐No ☐N/A
Frequency_____ Severity_____
Distress _____
☐ 1. Upset with caregiver; resists ADL's
☐ 2. Stubbornness
☐ 3. Uncooperative; resists help
☐ 4. Hard to handle
☐ 5. Cursing or shouting angrily
☐ 6. Slams doors; kicks, throws things
☐ 7. Hits, harms others
☐ 8. Other _____

D. DEPRESSION/DYSPHORIA: ☐Yes ☐No ☐N/A
Frequency_____ Severity_____
Distress _____
☐ 1. Tearful and sobbing
☐ 2. States, acts as if sad
☐ 3. Puts self down, feels like failure
☐ 4. "Bad person", deserves punishment
☐ 5. Discouraged, no future
☐ 6. Burden to family
☐ 7. Talks about dying, killing self
☐ 8. Other _____

E. ANXIETY: ☐Yes ☐No ☐N/A
Frequency_____ Severity_____
Distress _____
☐ 1. Worries about planned events
☐ 2. Feels shaky, tense
☐ 3. Sobs, sighs, gasps
☐ 4. Racing heart, "butterflies"
☐ 5. Phobic avoidance
☐ 6. Separation anxiety
☐ 7. Other _____

F. ELATION/EUPHORIA: ☐Yes ☐No ☐N/A
Frequency_____ Severity_____
Distress _____
☐ 1. Feels too good, too happy
☐ 2. Abnormal humor
☐ 3. Childish, laughs inappropriately
☐ 4. Jokes or remarks not funny to others
☐ 5. Childish pranks
☐ 6. Talks "big", grandiose
☐ 7. Other _____

CONTINUES ON NEXT PAG

G. APATHY/INDIFFERENCE: ☐Yes ☐No ☐N/A
Frequency_____ Severity_____
Distress _____
☐ 1. Less spontaneous or active
☐ 2. Less likely to initiate conversation
☐ 3. Less affectionate, lacking emotions
☐ 4. Contributes less to household chores
☐ 5. Less interested in others
☐ 6. Lost interest in friends or family
☐ 7. Less enthusiastic about interests
☐ 8. Other _____

H. DISINHIBITION: ☐Yes ☐No ☐N/A
Frequency_____ Severity_____
Distress _____
☐ 1. Acts impulsively
☐ 2. Excessively familiar with strangers
☐ 3. Insensitive or hurtful remarks
☐ 4. Crude or sexual remarks
☐ 5. Talks openly of private matters
☐ 6. Inappropriate touching of others
☐ 7. Other _____

I. IRRITABILITY/LIBILITY: ☐Yes ☐No ☐N/A
Frequency_____ Severity_____
Distress _____
☐ 1. Bad temper, "flies off handle" easily
☐ 2. Rapid changes in mood
☐ 3. Sudden flashes of anger
☐ 4. Impatient, trouble coping with delays
☐ 5. Cranky, irritable
☐ 6. Argues, difficult to get along with
☐ 7. Other _____

J. ABERRANT MOTOR BEHAVIOR: ☐Yes ☐No ☐N/A
Frequency_____ Severity_____
Distress _____
☐ 1. Paces without purpose
☐ 2. Opens or unpacks closets or drawers
☐ 3. Repeatedly dresses and undresses
☐ 4. Repetitive activities or "habits"
☐ 5. Handling, picking, wrapping behavior
☐ 6. Excessively fidgety
☐ 7. Other _____

K. SLEEP AND NIGHTTIME BEHAVIOR DISORDERS:
☐Yes ☐No ☐N/A
Frequency_____ Severity_____
Distress _____
☐ 1. Difficulty falling asleep
☐ 2. Up during the night
☐ 3. Wanders, paces, inappropriate activity
☐ 4. Awakens others at night
☐ 5. Wakes and dresses to go out at night
☐ 6. Early morning awakening
☐ 7. Sleeps excessively during the day
☐ 8. Other _____

L. APPETITE/EATING CHANGES: ☐Yes ☐No ☐N/A
Frequency_____ Severity_____
Distress _____
☐ 1. Loss of appetite
☐ 2. Increased appetite
☐ 3. Weight loss
☐ 4. Weight gain
☐ 5. Change in eating habits
☐ 6. Change in food preferences
☐ 7. Eating rituals
☐ 8. Other _____

NPI scoring

- Distress is scored as: Frequency + Severity
- 0. Not at all
- 1. Minimally (almost no change in work routine)
- 2. Mildly (some change in work routine but little time re-budgeting required)
- 3. Moderately (disrupts work routine, requires time re-budgeting)
- 4. Severely (disruptive, upsetting to staff and other residents, major time infringement
- 5. Very Severely or Extremely (very disruptive, major source of distress for staff and other residents, requires time usually devoted to other residents

1	Short attention span, easy distractible, unable to concentrate		■	■
2	Impulsive, impatient, low tolerance for pain frustration		■	■
3	Uncooperative, resistance to care, demanding			■
4	Violent/threatening violence people property	■		■
5	Explosive and/or unpredictable anger	■		■
6	Rocking, rubbing, moaning/other stimulating behaviour		■	■
7	Pulling at tubes restrains blankets ….		■	■
8	Wandering form treatment areas		■	■
9	Restless, pacing, excessive movements		■	■
10	Repetitive behaviours motor/verbal		■	■
11	Rapid loud/ excessive talking	■	■	
12	Sudden change of mood	■	■	
13	Easily initiated/ excessive crying/ laughing	■	■	
14	Sub-abusiveness physical/verbal	■		■
	Total scores	**Disinhibition score**	**Aggression score**	**Lability score**

Souvenaid
3 trials
Prodromal mild Ad and MCI 24 weeks
little or no difference
in global or specific cognitive functions

Behavioural Intervention

The DICE Approach

Describe

- Caregiver **describes** problematic behavior
  - Context (who, what, when and where)
  - Social and physical environment
  - Patient perspective
  - Degree of distress to patient and caregiver

Investigate

- Provider **investigates** possible causes of problem behavior
  - Patient
    - Medication side effects
    - Pain
    - Functional limitations
    - Medical conditions
    - Psychiatric comorbidity
    - Severity of cognitive impairment, executive dysfunction
    - Poor sleep hygiene
    - Sensory changes
    - Fear, sense of loss of control, boredom
  - Caregiver effects/expectations
  - Social and physical environment
  - Cultural factors

Kales et al, JAGS, 2014

Create

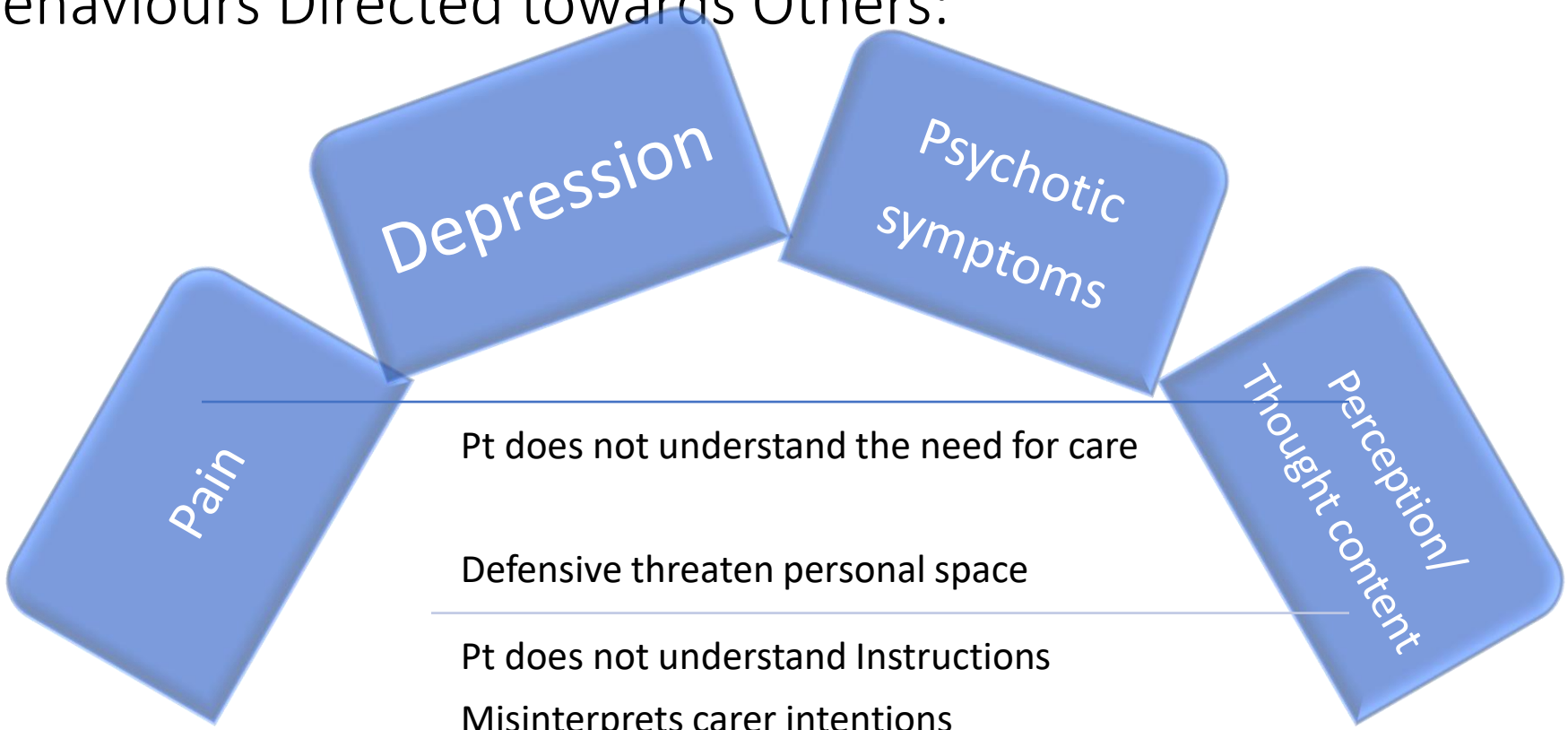
- Provider, caregiver and team **collaborate to create** and implement treatment plan
  - Respond to physical problems
  - Strategize behavioral interventions
    - Providing caregiver education and support
    - Enhancing communication with the patient
    - Creating meaningful activities for the patient
    - Simplifying tasks
    - Ensuring the environment is safe
    - Increasing or decreasing stimulation in the environment

Evaluate

- Provider **evaluates** whether "CREATE" interventions have been implemented by caregiver and are safe and effective

Consideration of Psychotropic Use (Acuity/Safety)

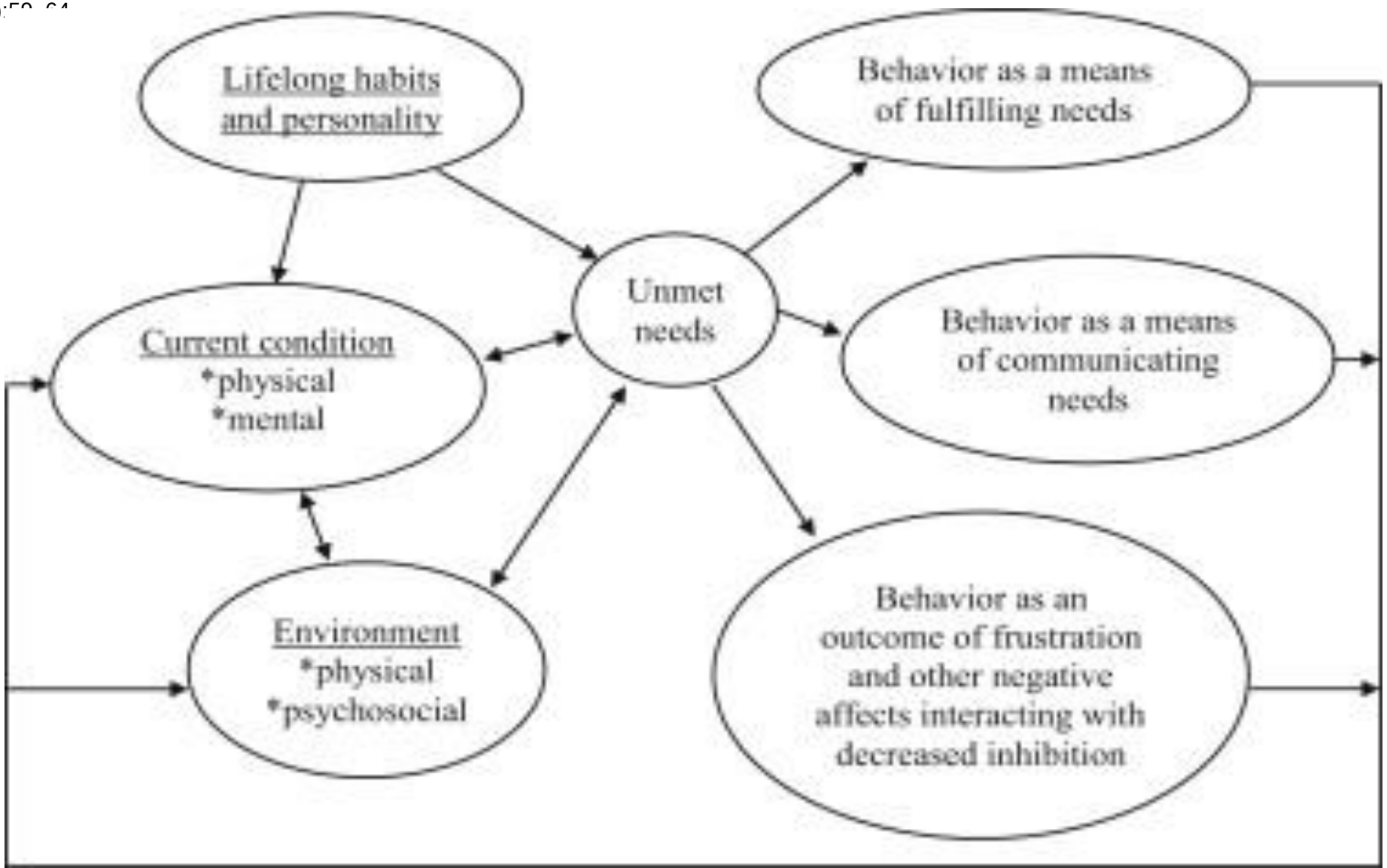
Reactive Factors Related to Rejection of Care and Behaviours Directed towards Others:



Dement Geriatr Cogn Disord Extra2015;5:123–34 Dutch N/H 1102 residents 15 months

Which unmet needs contribute to behavior problems in persons with advanced dementia?

Cohen-Mansfield J, Dakheel-Ali M, Marx MS, Thein K, Regier NG. Psychiatry Res. 2015;228(1):59-64.



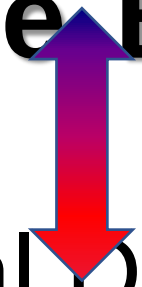
Which unmet needs contribute to behavior problems in persons with advanced dementia?

Cohen-Mansfield J, Dakheel-Ali M, Marx MS, Thein K, Regier NG. Psychiatry Res. 2015;228(1):59–64.

- On average, three unmet needs were identified per nursing home resident.
- The most common were needs for stimulation and for meaningful and social activities.
- The detection of PAIN

Lateral Thinking

Disruptive Behaviour



Physical Discomfort

Emotional Distress

Associations between pain and behavioural and psychiatric symptoms of dementia, using generalised estimating equations in 230 older people with dementia and unplanned acute medical admission. PAINAD (pain during movement)(pain at rest)2015International Association for the Study of Pain.

The Response of Agitated Behavior to Pain Management in Persons with Dementia Husebo B, Ballard C American Journal of Geriatric Psychiatry, 2014-07-01, Volume 22, Issue 7, Pages 708-717

- **Verbal Agitation**: p<0.001

Complaining- Negativism Repetitious sentences - Questioning-

Attention sicking- Cursing- Swearing

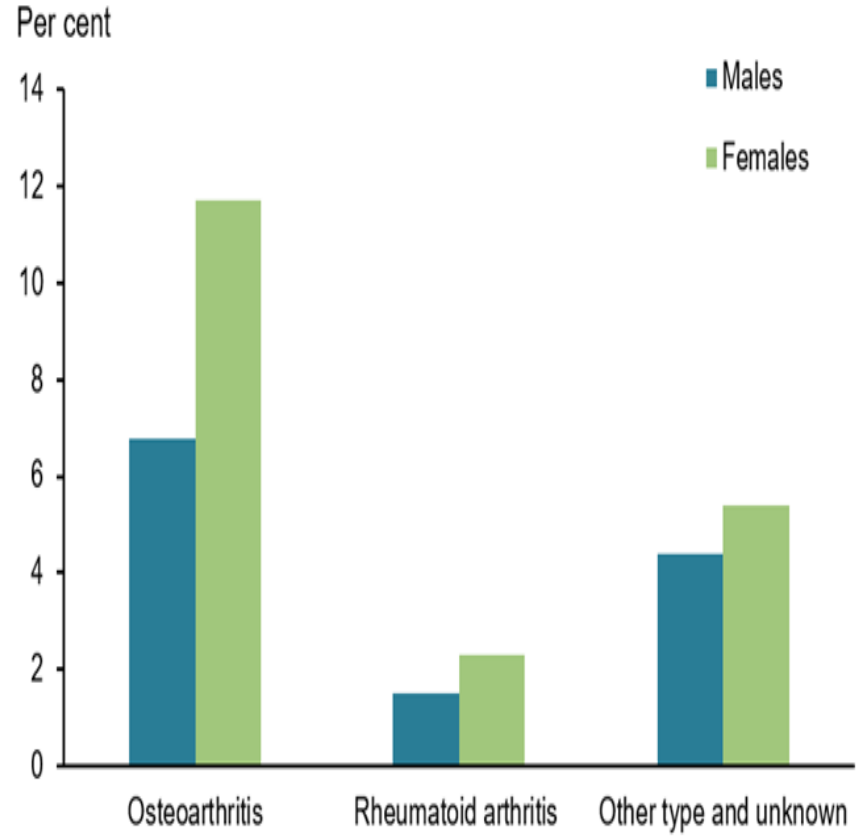
- **Physical Non-Aggressive behaviours** p=0.008

Pacing- Restless-

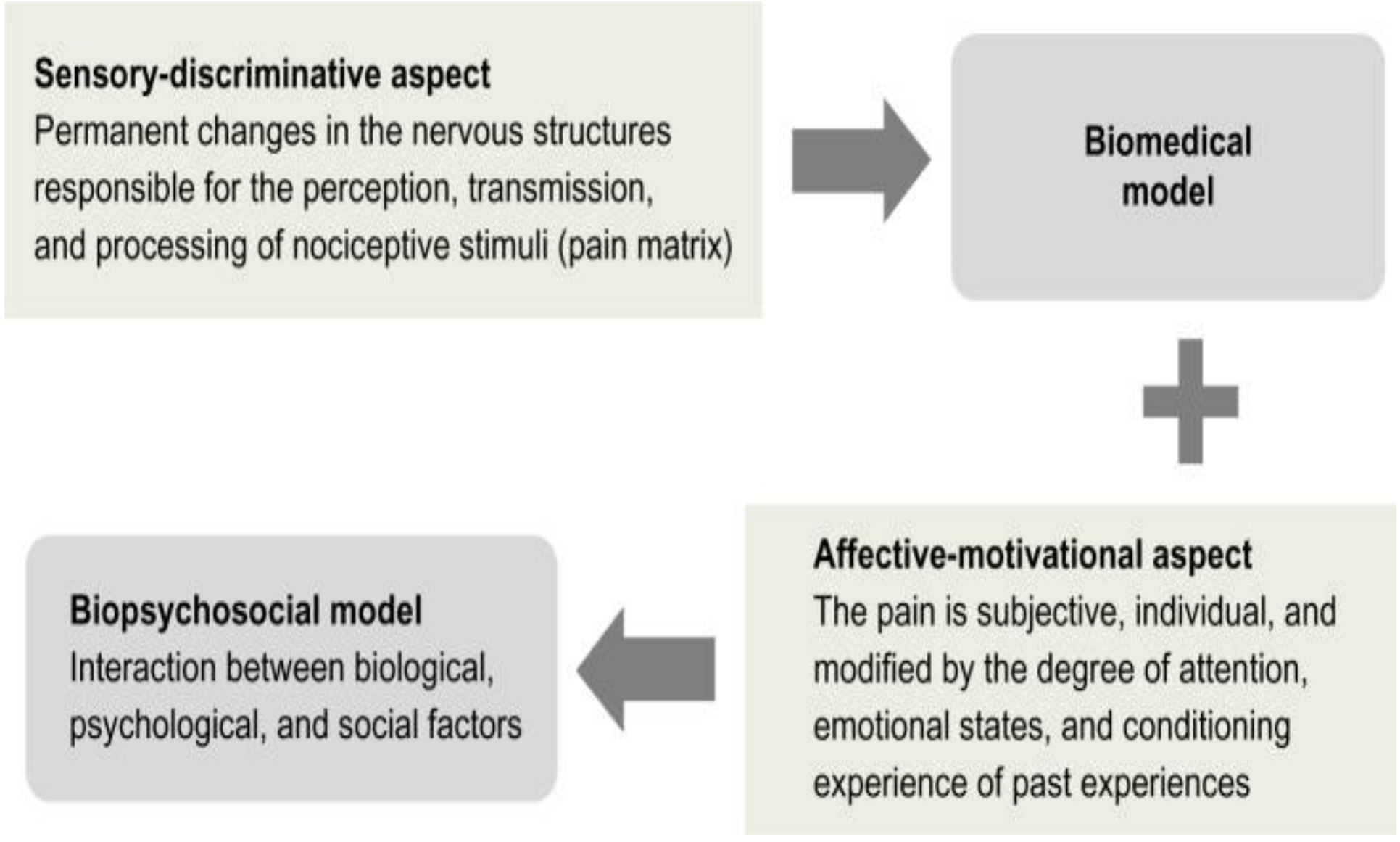
- **Physically aggressive behaviours** p=0.37

Most popular pains

- Arthritis Shoulder knee hip pain>90%
- Complex neck Back pain >40%
- Osteoporosis>60%
- Stomach IBS
- Angina
- Peripheral Neuropathy
- Bladder// Pelvic pain



Pain in Older Adults



Survey of the most frequently used observational scales Zwakhalen et al 2017

Observational scales	Available versions	Authors
The Abbey Pain Scale	English, Italian, Japanese	Abbey et al.,[1] 2004
Algoplus	English, French	Rat et al.,[53] 2011
Checklist of Nonverbal Pain Indicators (CNPI)	English, Norwegian	Feldt, 2000[28]
CNA Pain Assessment Tool (CPAT)	English	Cervo et al.,[13] 2009
Doloshort	French	Pautex et al.,[49] 2009
Doloplus-2	**Chinese, Dutch, English, French, Italian, Japanese, Norwegian, Portuguese, Spanish**	**Levebre-Chapiro, 2001[43]**
Discomfort Scale for Dementia of the Alzheimer's Type (DS-DAT)	Dutch, English, Italian	Hurley et al.,[32] 1992
Elderly Pain Caring Assessment (EPCA-2)	French	Morello et al.,[48] 2007
Mahoney Pain Scale (MPS)	English	Mahoney and Peters, 2008[47]
Mobilization-Observation-Behavior-Intensity-Dementia (MOBID and MOBID-2)	Norwegian	Husebo et al.,[33] 2007
Noncommunicating Patient's Pain Assessment Instrument (NOPPAIN)	Brazilian, English, Italian, Portuguese	Snow et al.,[63] 2004
The Pain Assessment in the Cognitively Impaired (PACI)	English	Kaasalainen et al.,[36,37] 2011
The Pain Assessment Scale for Seniors with Severe Dementia (PACSLAC)	**Dutch, English, French, Japanese, Portuguese**	**Fuchs-Lacelle and Hadjistavropoulos, 2004[30]**
PACSLAC-D	Dutch	Zwakhalen et al.,[79] 2007
PACSLAC 2	English	Chan et al.,[14] 2014
Pain Assessments in Dementing Elders (PADE)	English	Villanueva et al.,[74] 2003
The Pain Assessment in Advanced Dementia Scale (PAINAD)	**Chinese, Dutch, English, German, Italian, Portuguese, Spanish**	**Warden et al.,[75] 2003**
Pain Assessment in Noncommunicative Elderly Persons (PAINE)	English	Cohen-Mansfield, 2006[16]
Rotterdam Elderly Pain Observation Scale (REPOS)	Dutch, English	van Herk et al.,[72] 2008

Bold denotes scales, which can be especially recommended according to others,[40,61] and one of the present authors (S.L.).

PAINAD

	0	1	2	Score
Breathing, independent of vocalization	Normal	▪Occasional labored breathing ▪Short period of hyperventilation	▪Noisy labored breathing ▪Long period of hyperventilation ▪Cheyne-Stokes respirations	
Negative vocalization	None	▪Occasional moan or groan ▪Low-level speech with a negative or disapproving quality	▪Repeated troubled calling out ▪Loud moaning or groaning ▪Crying	
Facial expression	Smiling or inexpressive	▪Sad, frightened ▪Frown	▪Facial grimacing	
Body language	Relaxed	▪Tense ▪Distressed pacing ▪Fidgeting	▪Rigid, fists clenched ▪Knees pulled up ▪Pulling or pushing away ▪Striking out	
Consolability	No need to console	▪Distracted or reassured by voice or touch	▪Unable to console, distract, or reassure	
				TOTAL

Abbey Pain Scale

For measurement of pain in people with dementia who cannot verbalise.

How to use scale : While observing the resident, score questions 1 to 6.

Name of resident : .....

Name and designation of person completing the scale : .....

Date : ..... **Time :** .....

Latest pain relief given was.....**at**.....**hrs.**

Q1. Vocalisation
eg whimpering, groaning, crying
Absent 0 Mild 1 Moderate 2 Severe 3

Q1 ☐

Q2. Facial expression
eg looking tense, frowning, grimacing, looking frightened
Absent 0 Mild 1 Moderate 2 Severe 3

Q2 ☐

Q3. Change in body language
eg fidgeting, rocking, guarding part of body, withdrawn
Absent 0 Mild 1 Moderate 2 Severe 3

Q3 ☐

Q4. Behavioural Change
eg increased confusion, refusing to eat, alteration in usual patterns
Absent 0 Mild 1 Moderate 2 Severe 3

Q4 ☐

Q5. Physiological change
eg temperature, pulse or blood pressure outside normal limits, perspiring, flushing or pallor
Absent 0 Mild 1 Moderate 2 Severe 3

Q5 ☐

Q6. Physical changes
eg skin tears, pressure areas, arthritis, contractures, previous injuries
Absent 0 Mild 1 Moderate 2 Severe 3

Q6 ☐

Add scores for 1 - 6 and record here ⇒ **Total Pain Score** ☐

Now tick the box that matches the Total Pain Score ⇒

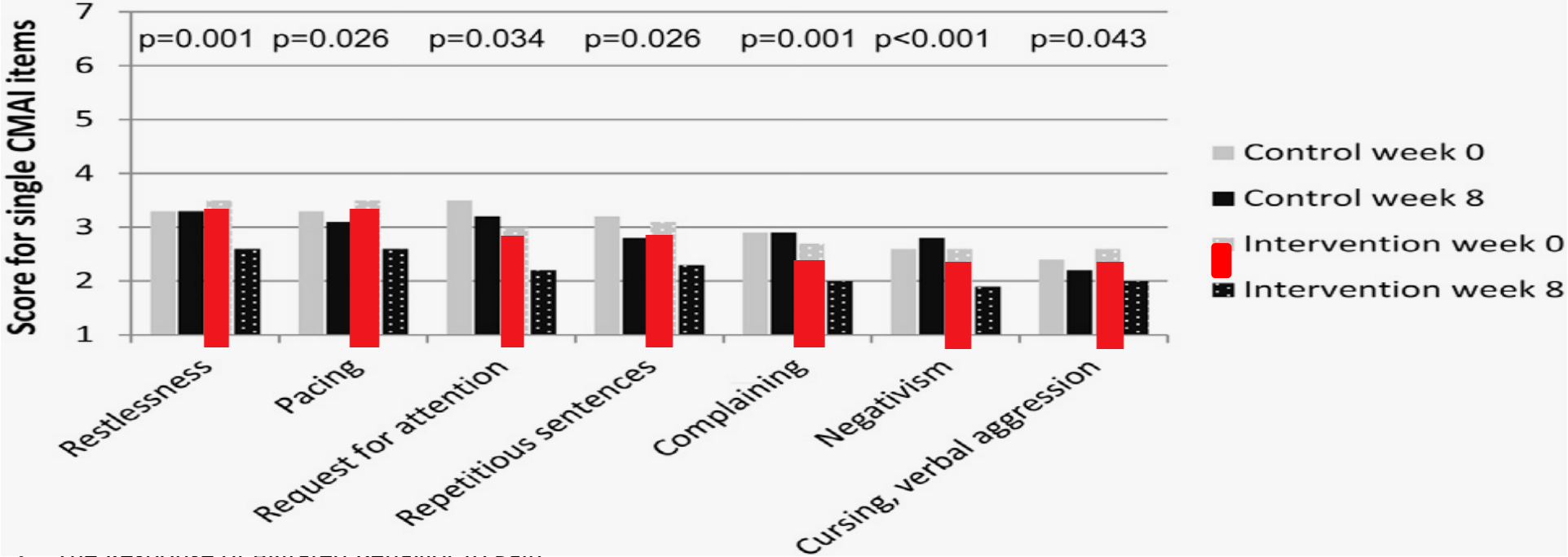
0 - 2 No pain	3 - 7 Mild	8 - 13 Moderate	14 + Severe

Finally, tick the box which matches the type of pain ⇒

Chronic	Acute	Acute on Chronic

Abbey, J; De Bellis, A; Piller, N; Esterman, A; Giles, L; Parker, D and Lowcay, B.
Funded by the JH & JD Gunn Medical Research Foundation 1998 - 2002

Prevalence of chronic pain in elderly nursing home residents

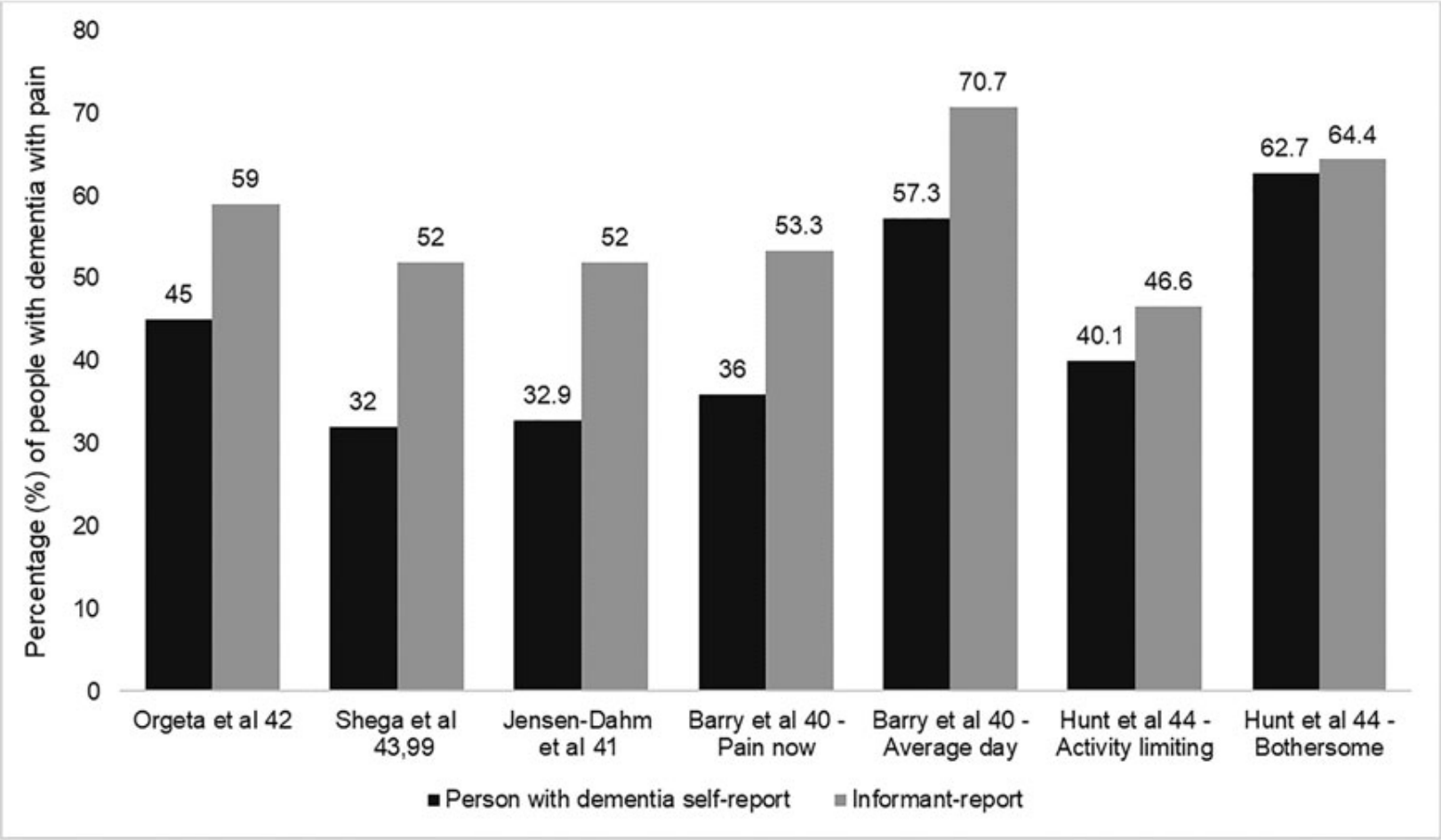


- The Response of Agitated Behavior to Pain
- Management of agitation in Persons with Dementia 2012

- Identifying and Managing Pain in People with Alzheimer's Disease and Other Types of Dementia: A Systematic Review

  BS. Husebo,Wachterberg,E FloCNS Drugs (**2016**) 30:481–497
- Husebo B.S., Ballard C., Sandvik R., et al: Efficacy of treating pain to reduce behavioural disturbances in residents of nursing homes with dementia: cluster randomised clinical trial. BMJ **2011;** 343: pp. 1-10
- Husebo B.S., Strand L.I., Moe-Nilssen R., et al: Pain in older persons with severe dementia. Psychometric properties of the Mobilization-Observation-Behaviour-Intensity-Dementia (MOBID-2) Pain Scale in a clinical setting. Scand J Caring Sci **2010**; 24: pp. 380-391
- Husebo B.S., Strand L.I., Moe-Nilssen R., et al: Who suffers most? Dementia and pain in nursing home patients: a cross-sectional study. JAMDA **2008**; 9: pp. 427-433
- Husebo B.S., Strand L.I., Moe-Nilssen R., et al: Mobilization-Observation-Behavior-Intensity-Dementia Pain Scale (MOBID): development and validation of a nurse-administered pain assessment tool for use in dementia. J Pain Sympt Manage **2007**; 34: pp. 67-80

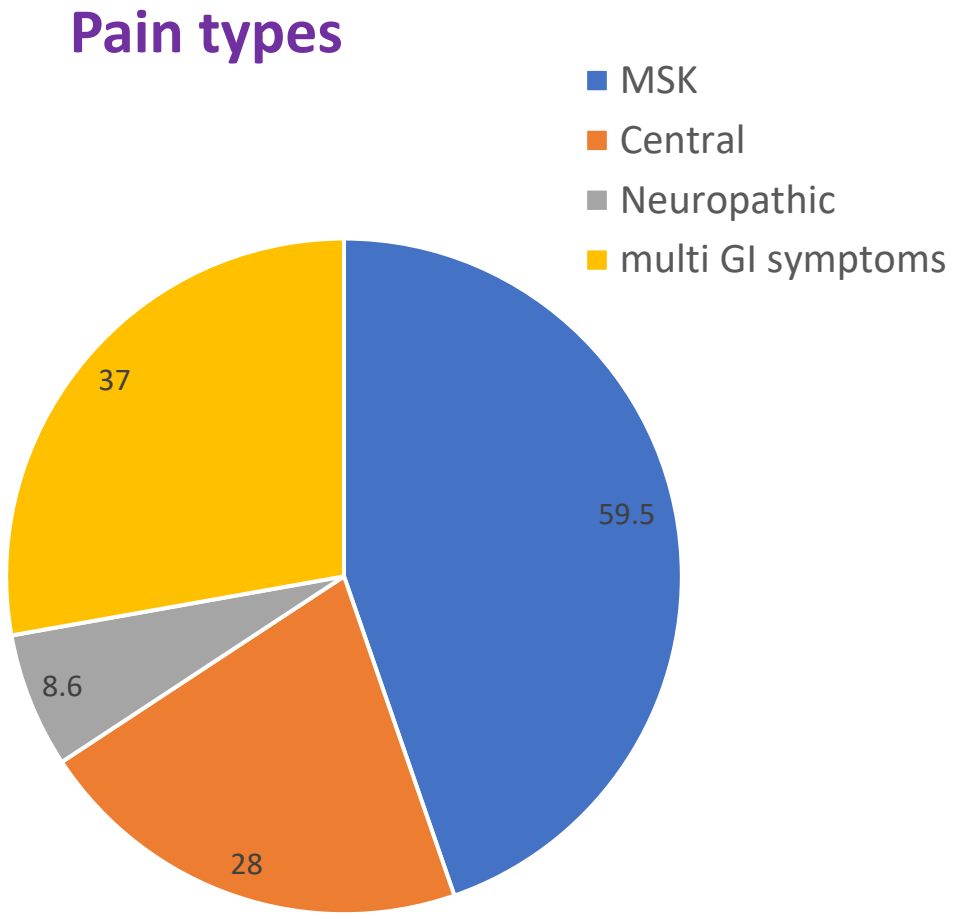
Pain self report/ Carers reporting

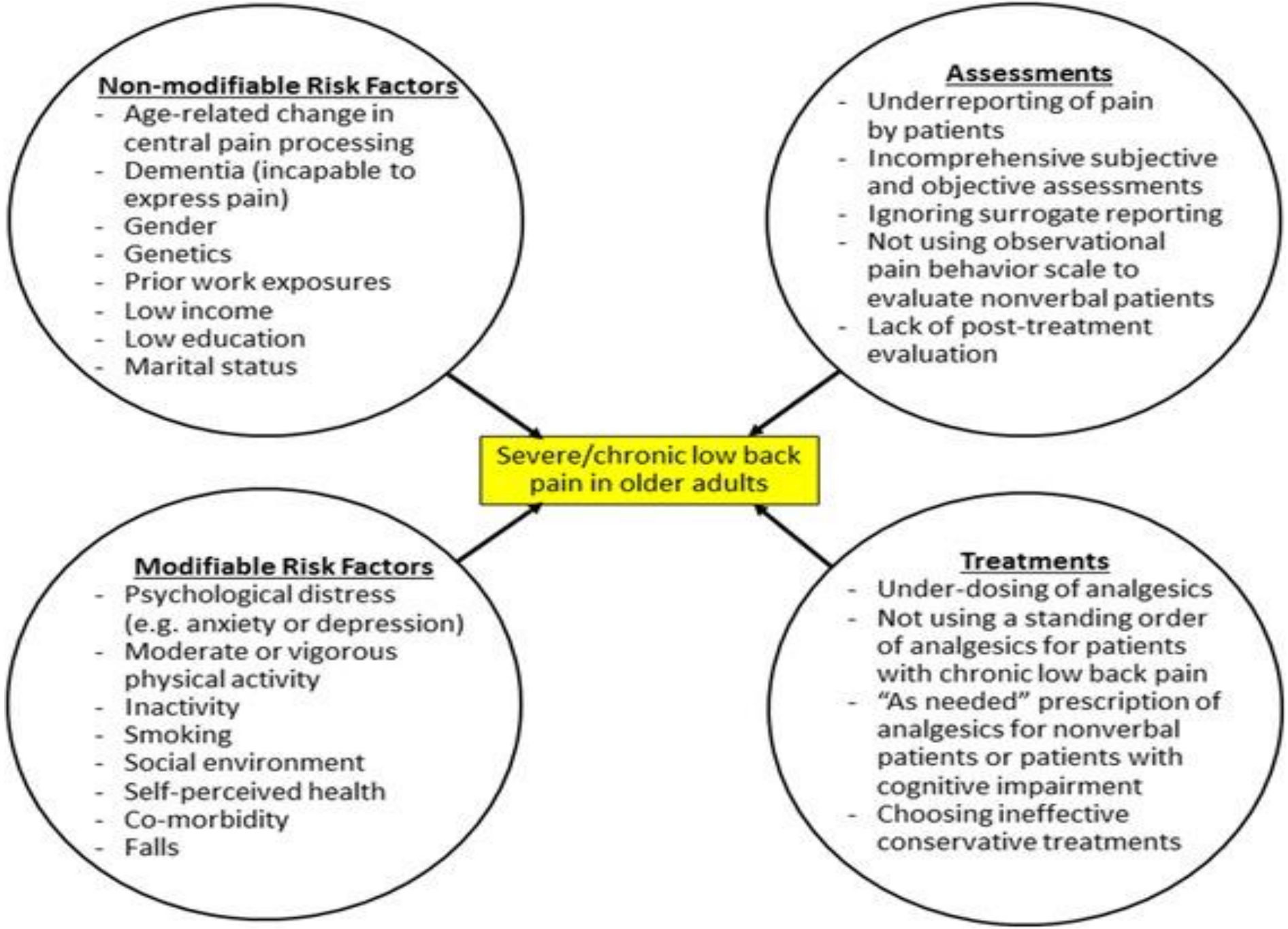


Pain assessment and pain treatment for community-dwelling people with dementia: A systematic review and narrative Synthesis Int J Geriatr Psychiatry. 2019;34:807–821

- **Prevalence of pain in atypical parkinsonism: a systematic review and meta-analysis** *Journal of Neurology* **vol 266**, pg2093–2102, 2019

Multiple system atrophy (MSA)
Progressive supranuclear palsy (PSP),
Corticobasal degeneration (CBD)
Dementia with Lewy bodies DLD




Non-modifiable Risk Factors
- Age-related change in central pain processing
- Dementia (incapable to express pain)
- Gender
- Genetics
- Prior work exposures
- Low income
- Low education
- Marital status
Assessments
- Underreporting of pain by patients
- Incomprehensive subjective and objective assessments
- Ignoring surrogate reporting
- Not using observational pain behavior scale to evaluate nonverbal patients
- Lack of post-treatment evaluation
Severe/chronic low back pain in older adults
Modifiable Risk Factors
- Psychological distress (e.g. anxiety or depression)
- Moderate or vigorous physical activity
- Inactivity
- Smoking
- Social environment
- Self-perceived health
- Co-morbidity
- Falls
Treatments
- Under-dosing of analgesics
- Not using a standing order of analgesics for patients with chronic low back pain
- "As needed" prescription of analgesics for nonverbal patients or patients with cognitive impairment
- Choosing ineffective conservative treatments

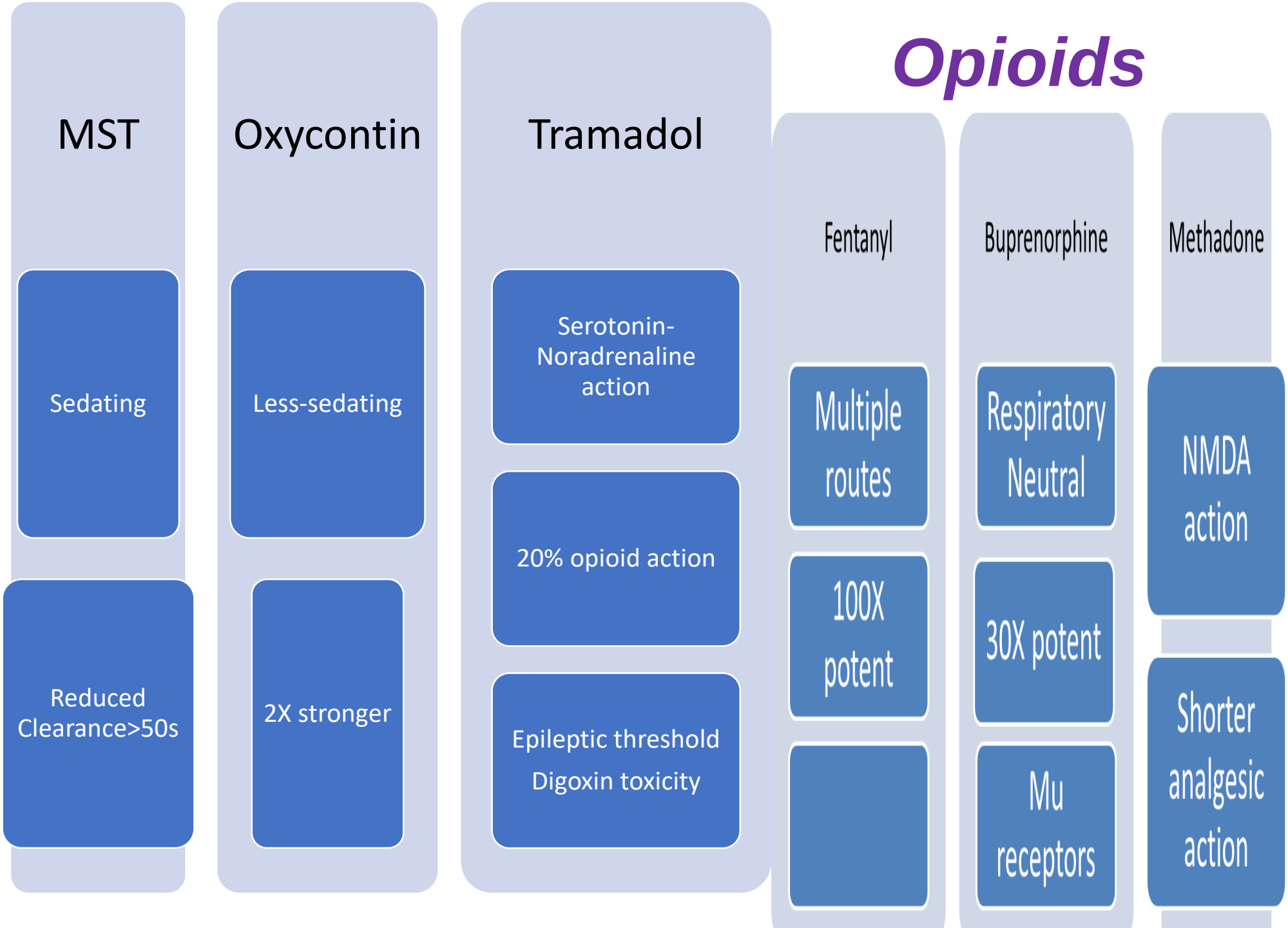
Poly-pharmacy ?

- 5> drugs vs >10 drugs
- Duration of therapy
- Appropriate vs Inappropriate
- Specific Co-morbidities

- **NNT**
- **NNH**

3 in 4
people dispensed anti-dementia medications were also dispensed medications for the cardiovascular system 2019

Opioids


MST
Sedating
Reduced Clearance>50s
Oxycontin
Less-sedating
2X stronger
Tramadol
Serotonin-Noradrenaline action
20% opioid action
Epileptic threshold
Digoxin toxicity
Fentanyl
Multiple routes
100X potent
Buprenorphine
Respiratory Neutral
30X potent
Mu receptors
Methadone
NMDA action
Shorter analgesic action

- Absorption time
- Elimination= liver // kidneys
- Drug-drug interactions
- Drug –disease interaction
- Side effects by age
- Target symptomatology

Amitriptyline

Fentanyl

NNT

- **Statins**

>one year mostly at >4 years

Heart Protection Study,

4S study <80yrs old

more effective 65yrs old

NNT 67 intermediate CVrisk

NNH 21 Myalgia