

# Dementia and BPSD



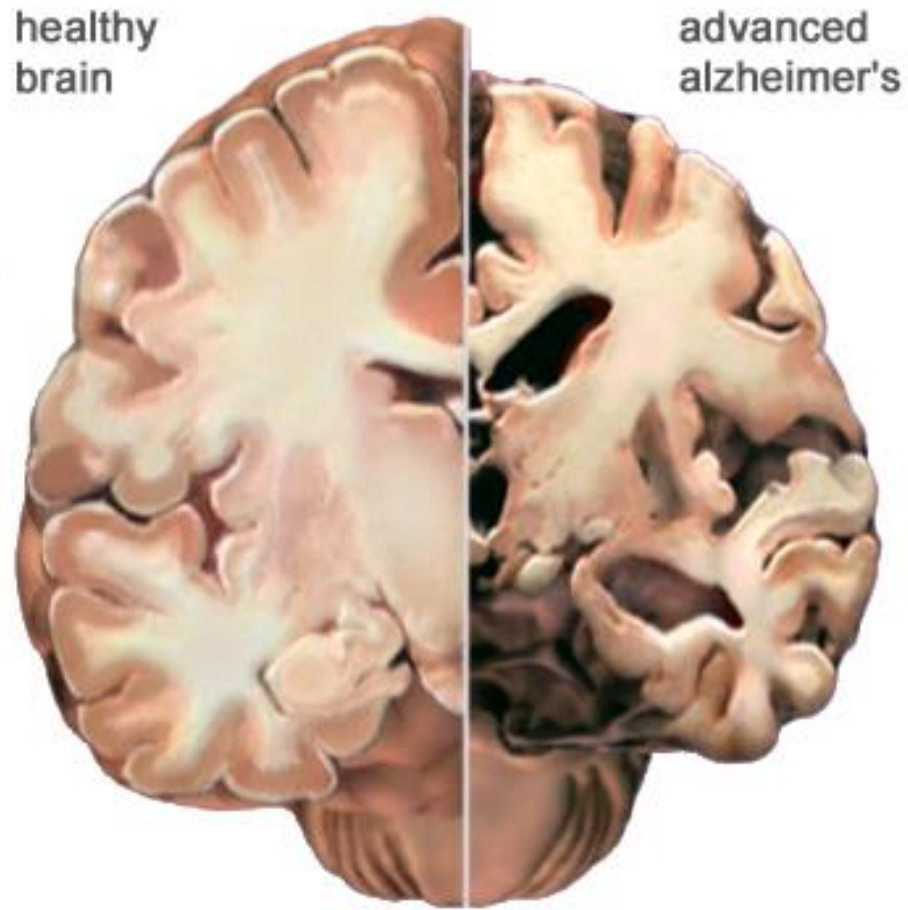
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Psychiatry  
4 August 2017

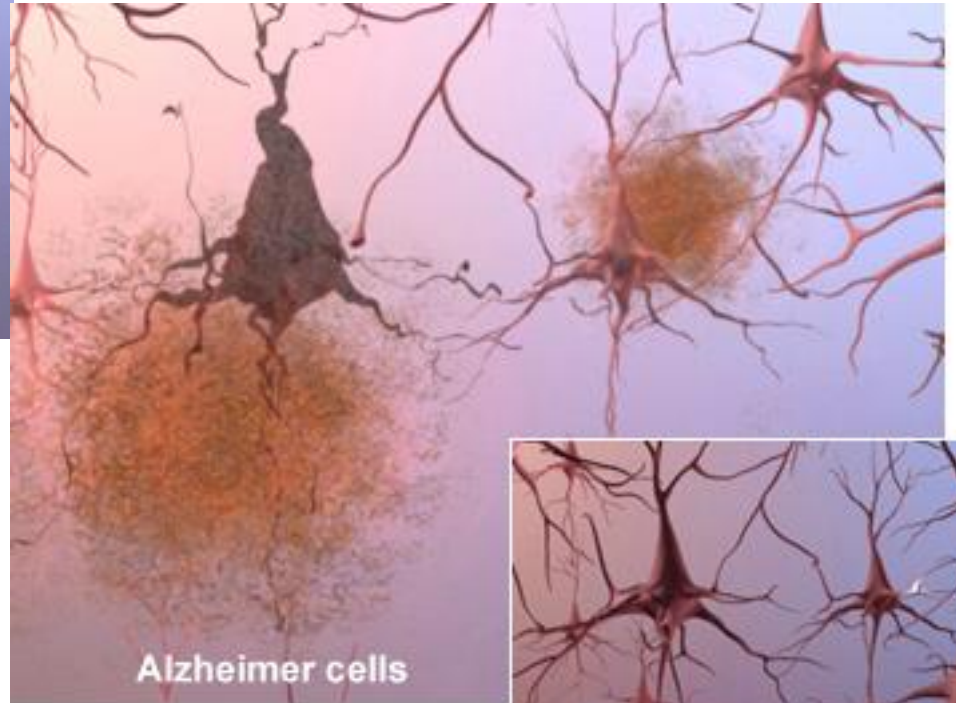
# Overview

- Dementia some broad concepts
- Dementia the trajectory
- BPSD
- Aetiology
- Treatments
  - Non pharmacological
  - Pharmacological

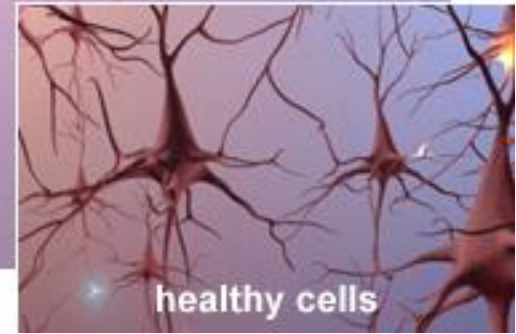


# What is Dementia?





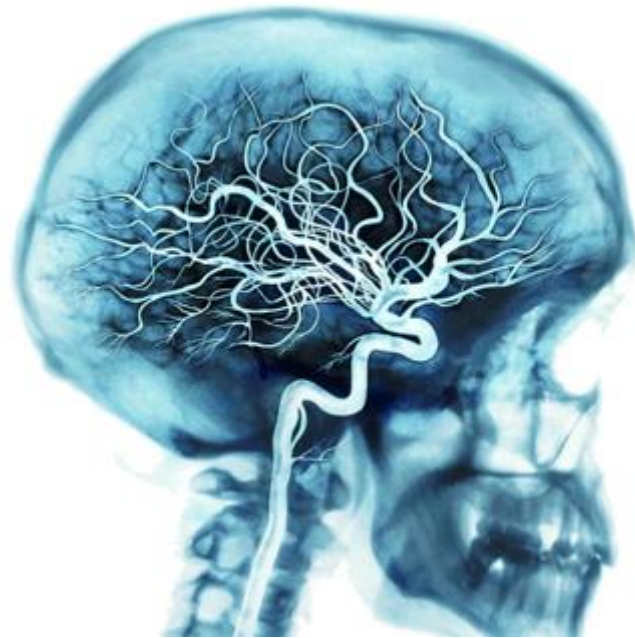
Alzheimer cells



healthy cells



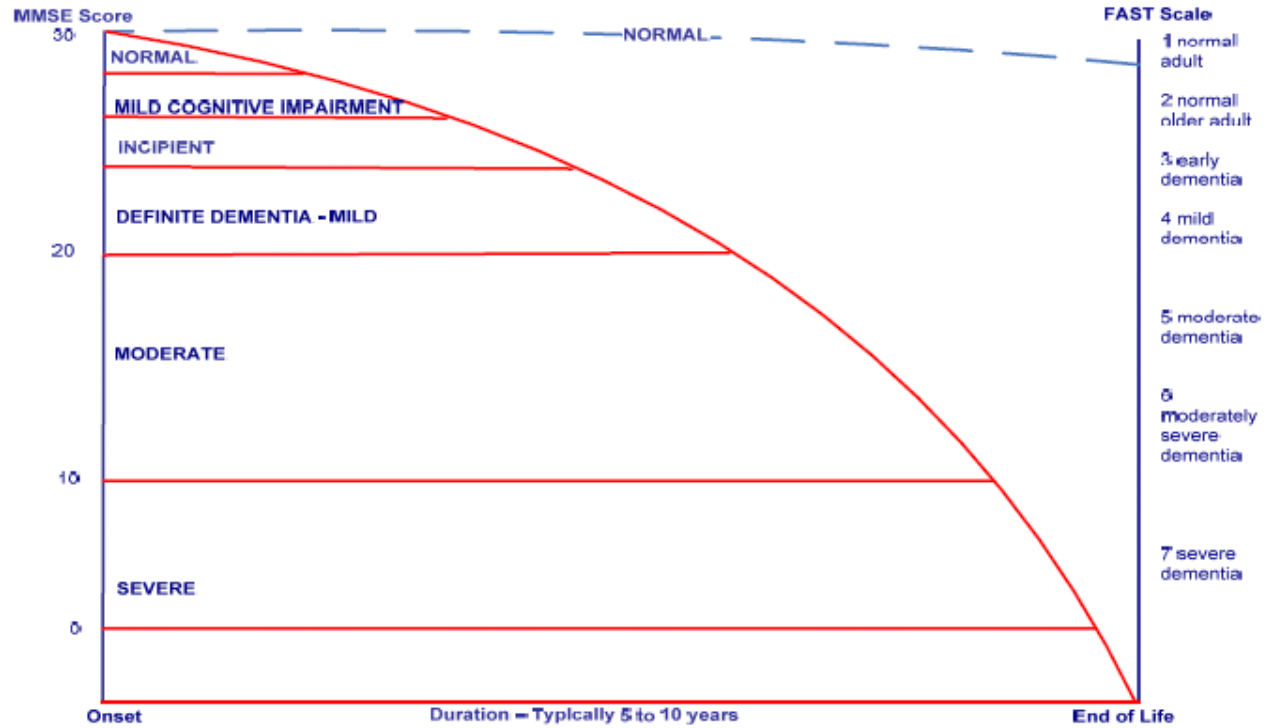
# Vascular Dementia



# FAST Scale

- **1 which is normal adult**
- **2 which is normal older adult = mild memory loss**
- **3 which is early dementia = others notice change in function**
- **4 which is mild dementia** = difficulty with finances, counting money, and travel to new locations. Memory loss increases.
- **5 which is moderate dementia** = They do not need assistance with toileting or eating, but do need help choosing clothing. The patient may not know the date and year or where they live
- **6 which is moderately severe dementia** = The person requires more assistance with activities of daily living, such as bathing, toileting, and eating. Patients in this stage may develop delusions, hallucinations, or obsessions. Patients show increased anxiety and may become violent.
- **7 which is severe dementia** = all speech is lost. Patients lose urinary and bowel control. They lose the ability to walk.

## DEMENTIA MODEL - THE FRAMEWORK

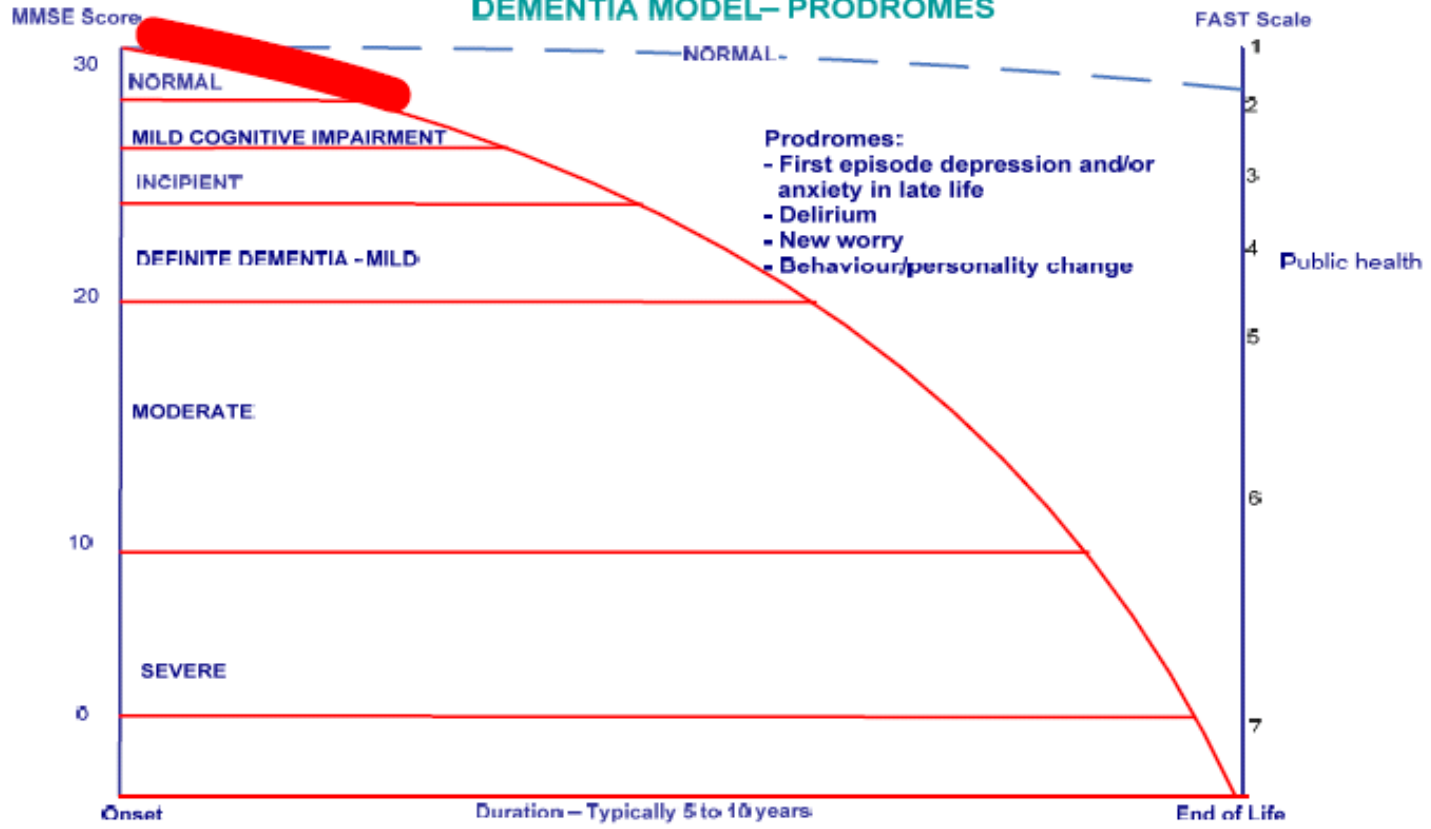


# Early stages

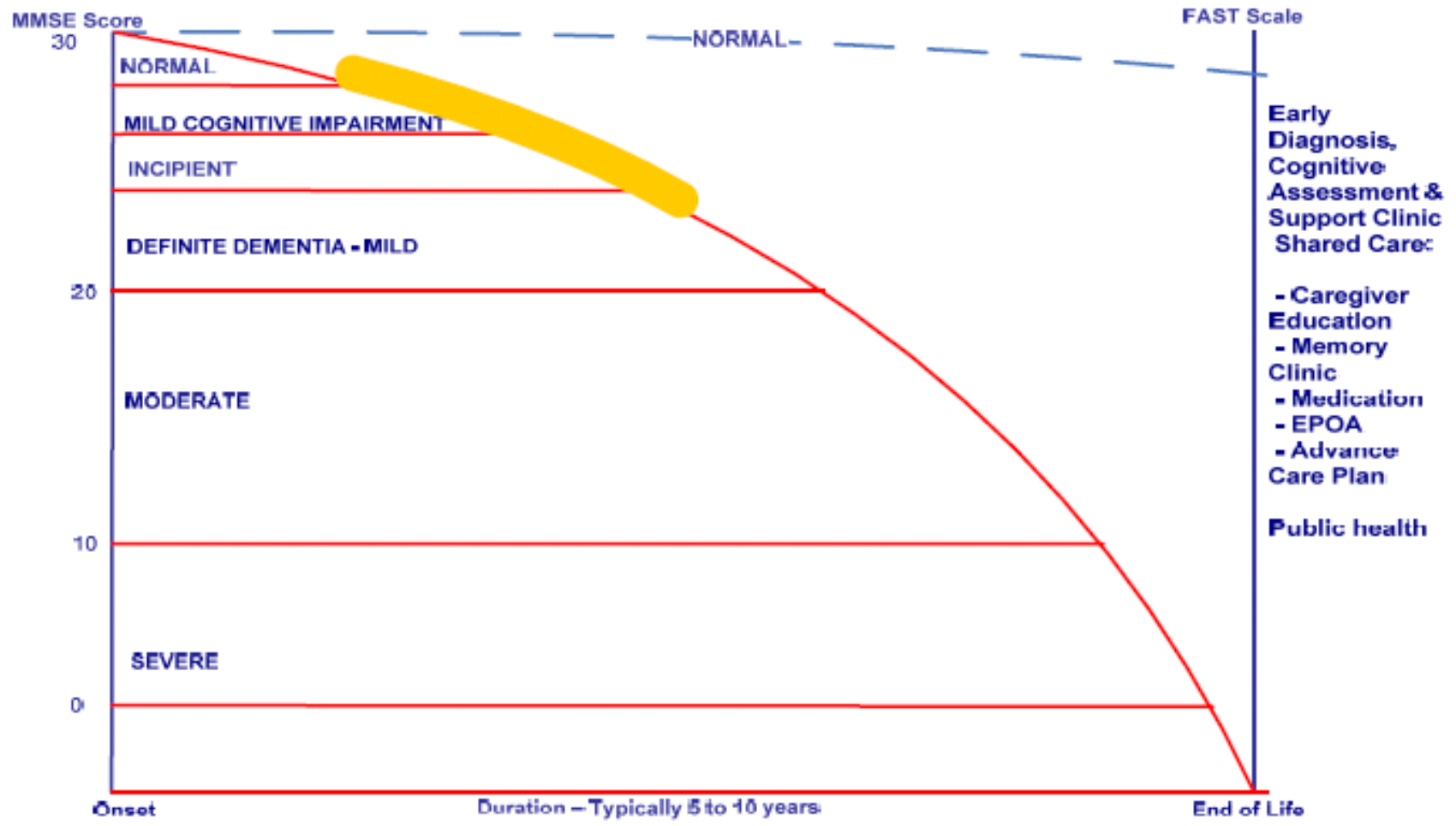




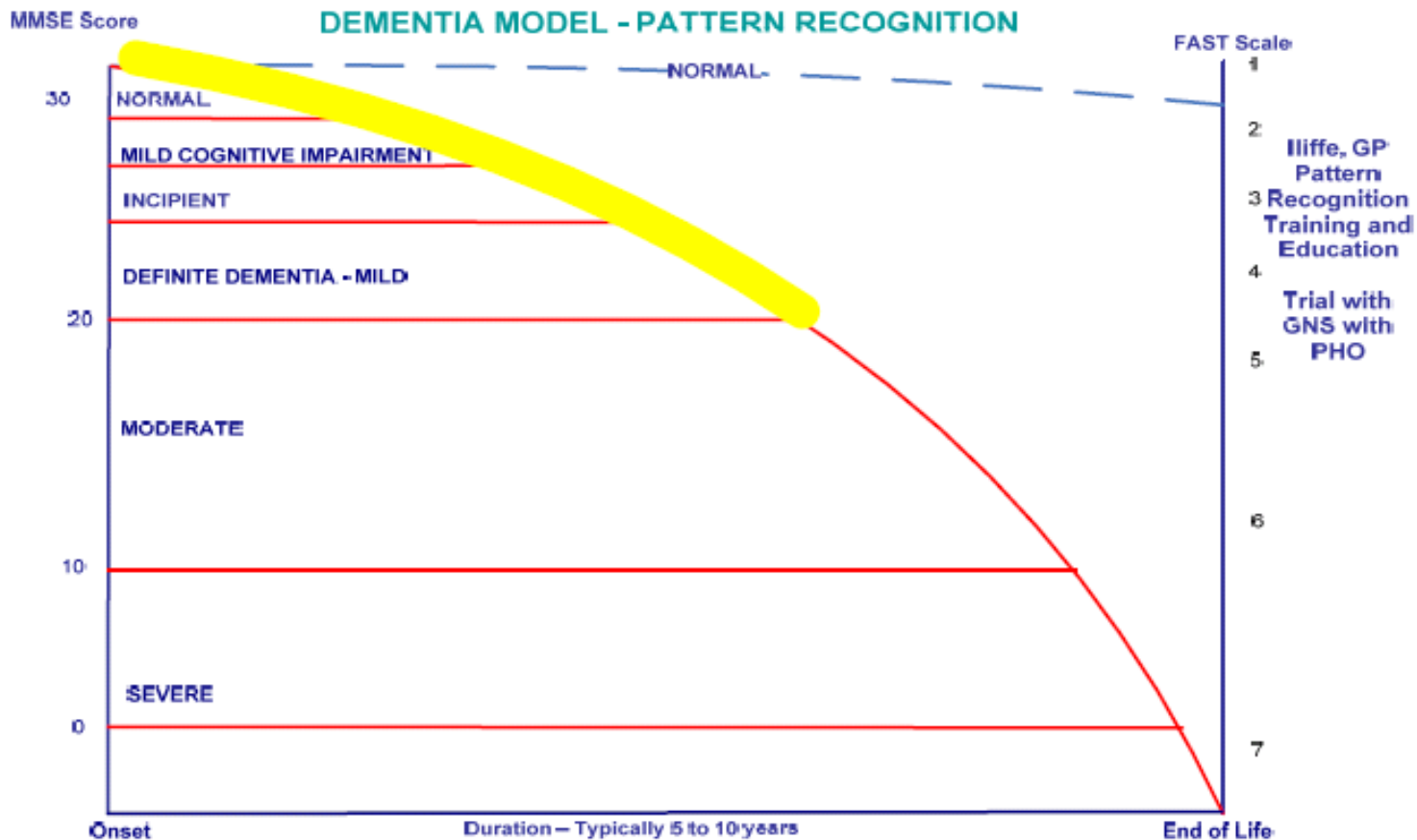
### DEMENTIA MODEL- PRODROMES

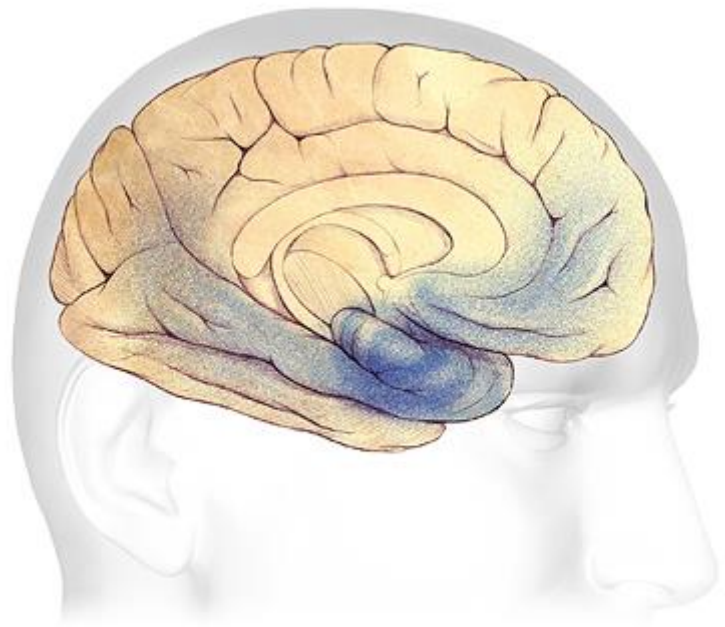


# DEMENTIA MODEL – EARLY DIAGNOSIS

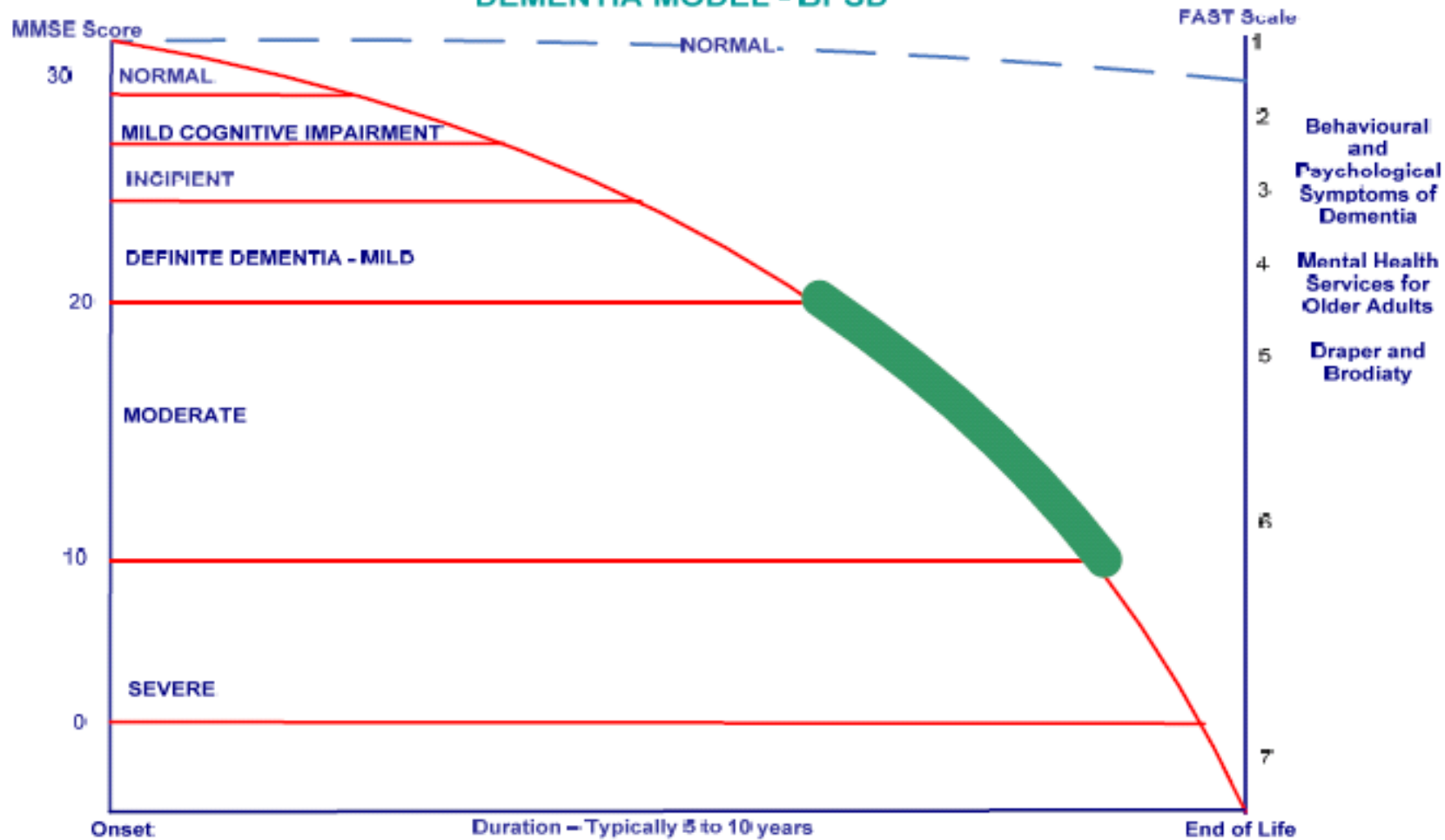


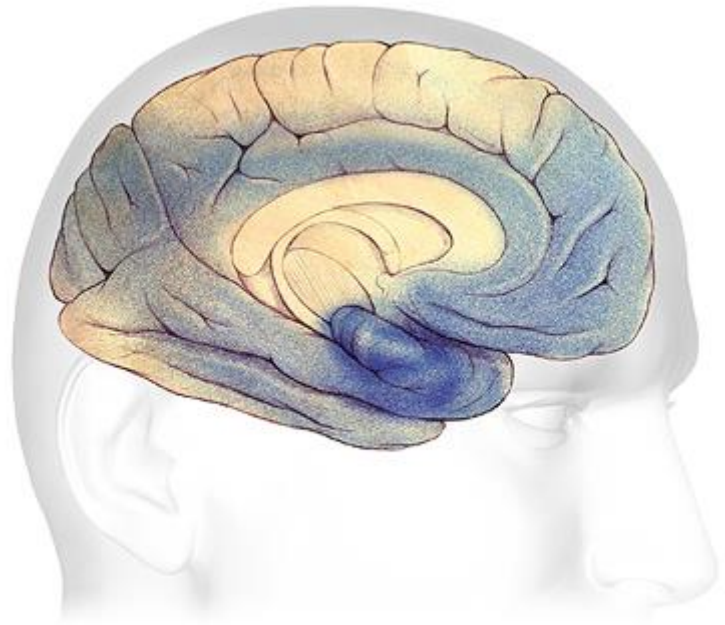
## DEMENTIA MODEL - PATTERN RECOGNITION



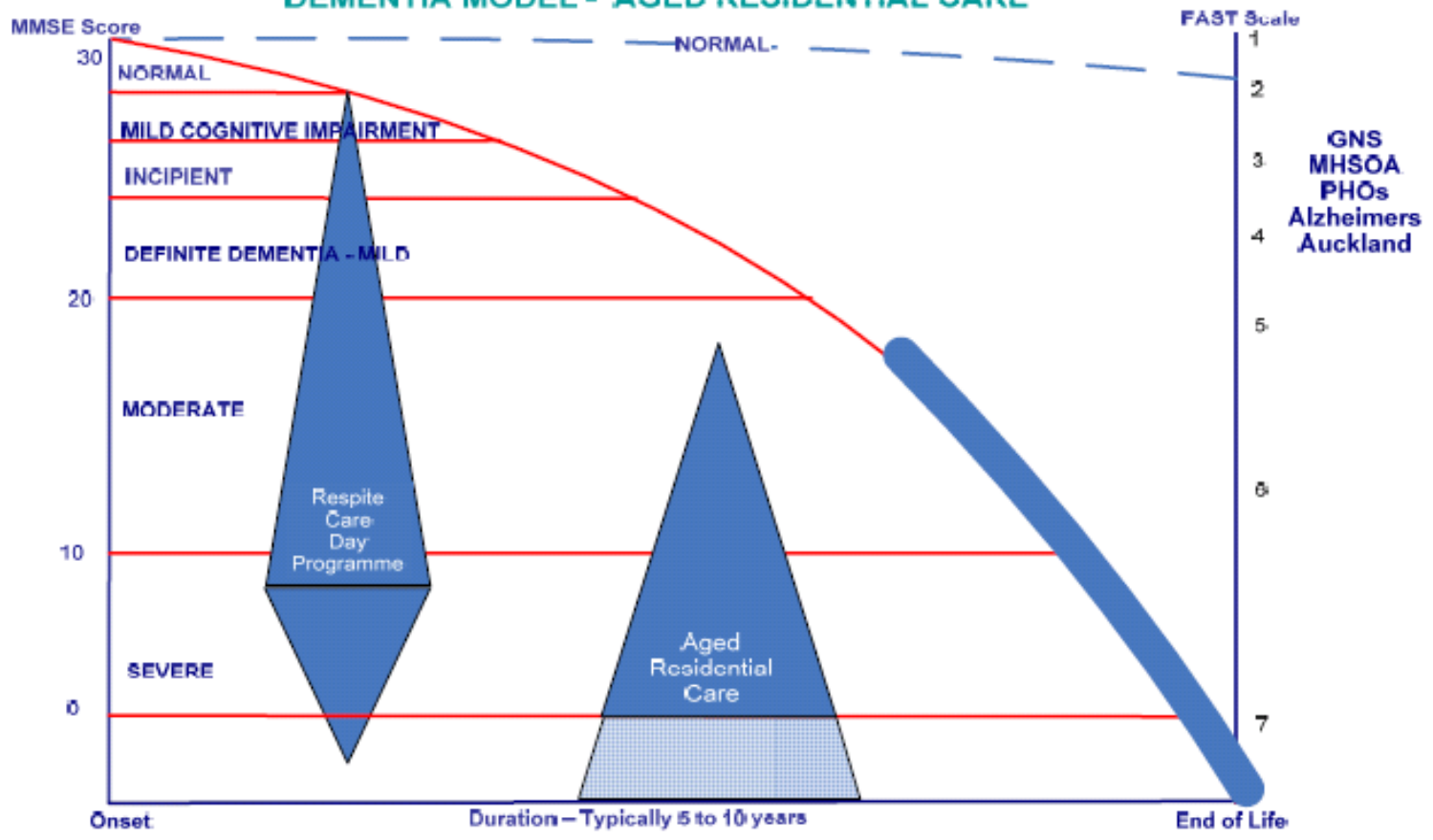


## DEMENTIA MODEL - BPSD



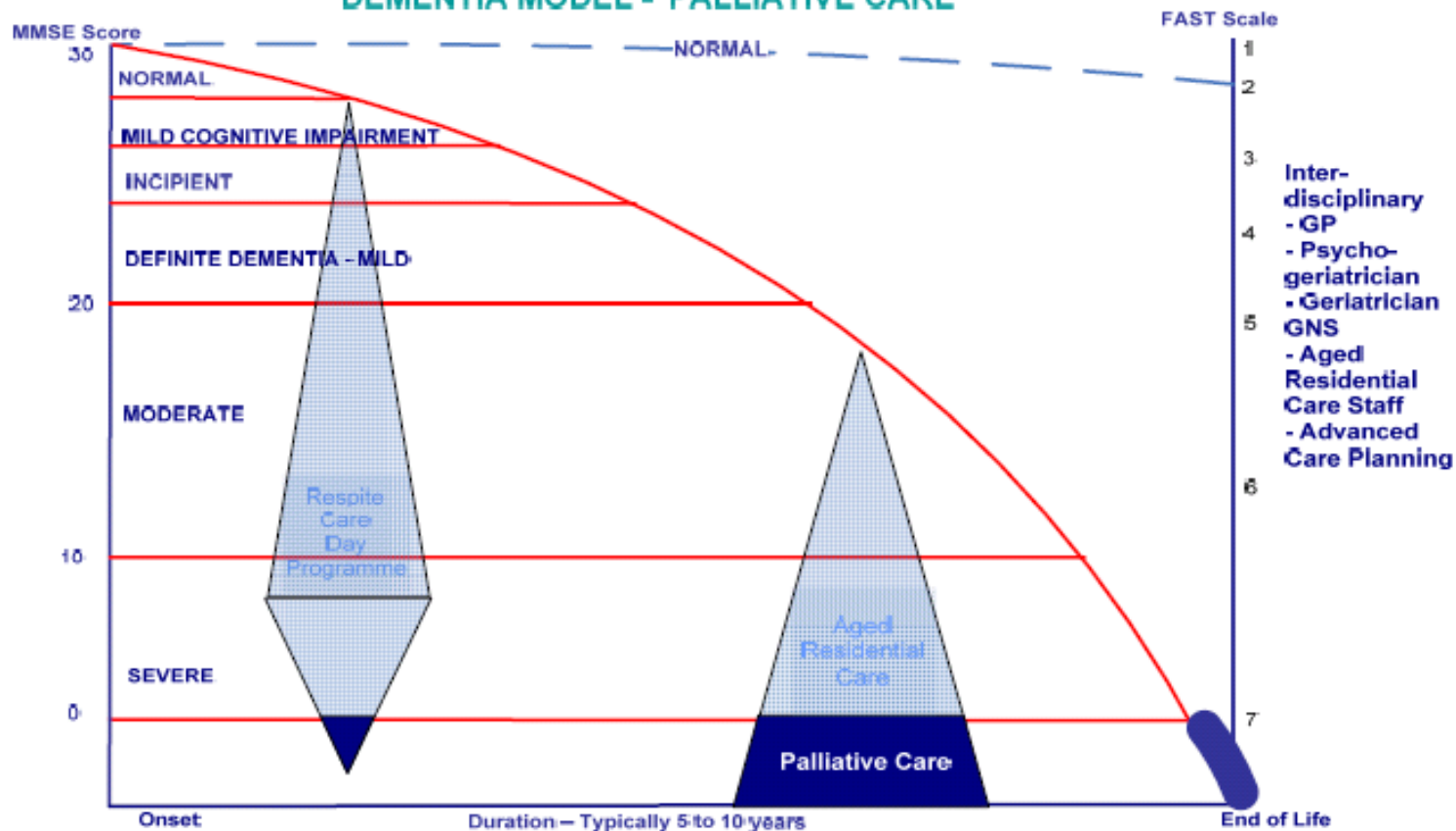


# DEMENTIA MODEL - AGED RESIDENTIAL CARE



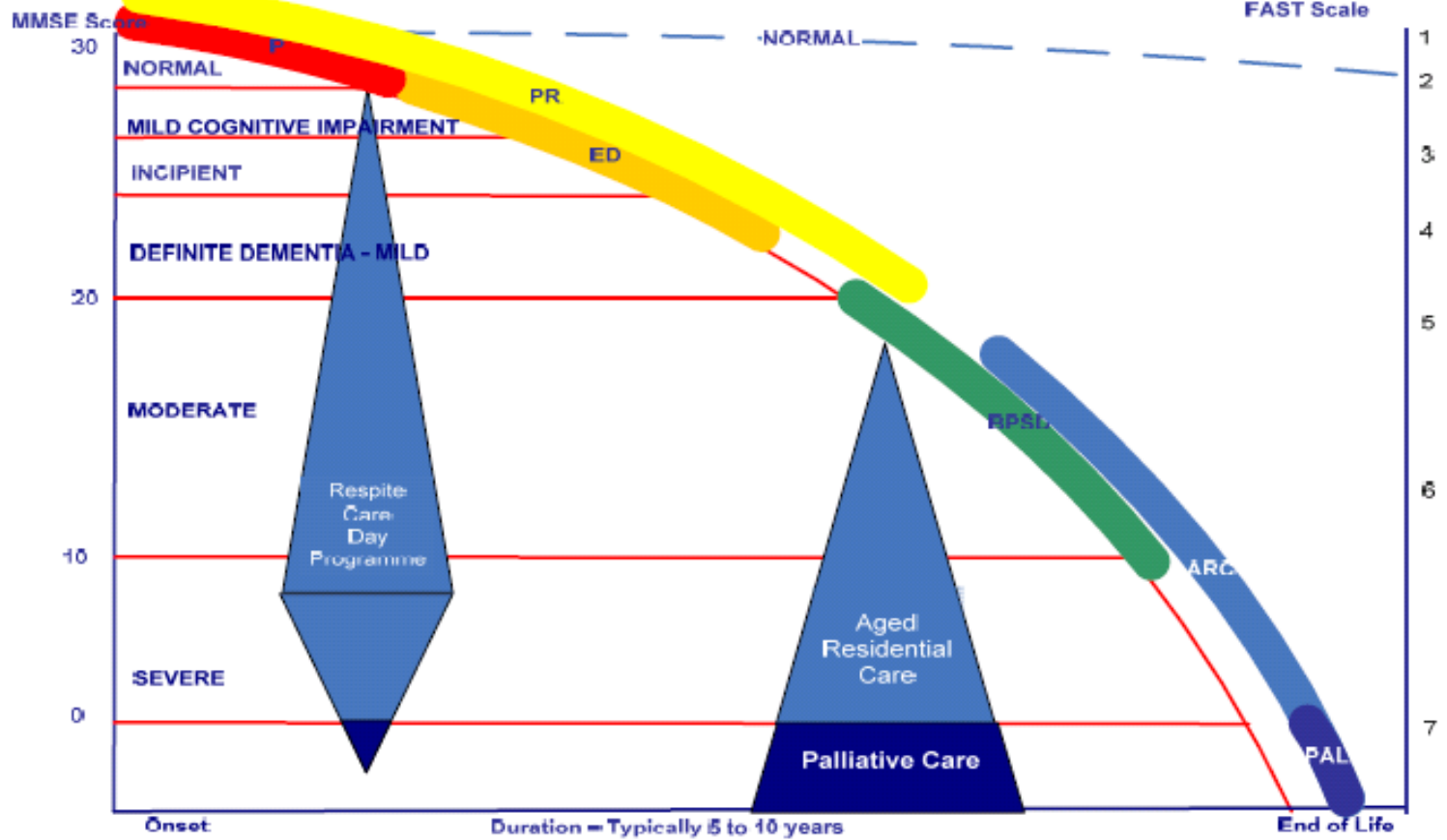
GNS  
MHSOA  
PHOs  
Alzheimers  
Auckland

## DEMENTIA MODEL - PALLIATIVE CARE

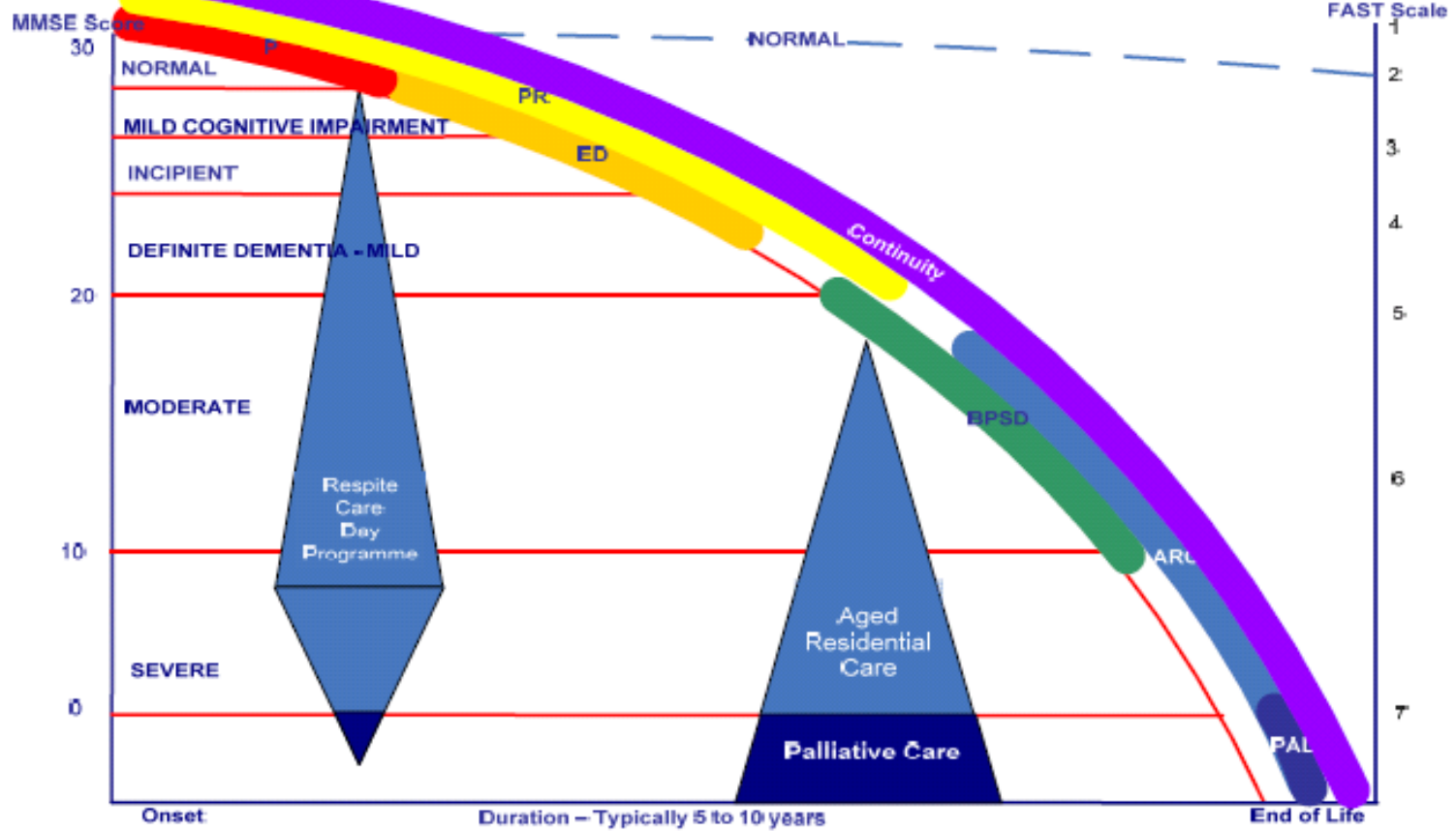




# DEMENTIA MODEL



# DEMENTIA MODEL: A CONTINUUM



# What are BPSD?



# What are BPSD?

- Agitation
- Aggression
- Calling out/ screaming
- Disinhibition (sexual)
- Wandering
- Night time disturbance
- Shadowing
- Swearing
- Depression
- Anxiety
- Apathy
- Delusions
- Hallucinations
- Irritability
- Elation/euphoria

## Types of behavioral and psychological symptoms of dementia\*

Delusions (distressing beliefs)

Hallucinations

Agitation:

- Easily upset
- Repeating questions
- Arguing or complaining
- Hoarding
- Pacing
- Inappropriate screaming, crying out, disruptive sounds
- Rejection of care (for example, bathing, dressing, grooming)
- Leaving home

Aggression (physical or verbal)

Depression or dysphoria

Anxiety:

- Worrying
- Shadowing (following care giver)

Apathy or indifference

Disinhibition:

- Socially inappropriate behavior
- Sexually inappropriate behavior

Irritability or lability

Motor disturbance (repetitive activities without purpose):

- Wandering
- Rummaging

Night-time behaviors (waking and getting up at night)

\*Based on modified neuropsychiatric Inventory-Q categories. Some behaviors under agitation need more research to determine whether they are part of agitation or their own entity (for example, rejection of care).

# Wedding Cake Model of BPSD



# BPSD

- Wedding cake model of BPSD



Activities of Daily Living



Cognitive Symptoms

Activities of Daily Living



**Behavioural Symptoms**

**Cognitive Symptoms**

**Activities of Daily Living**



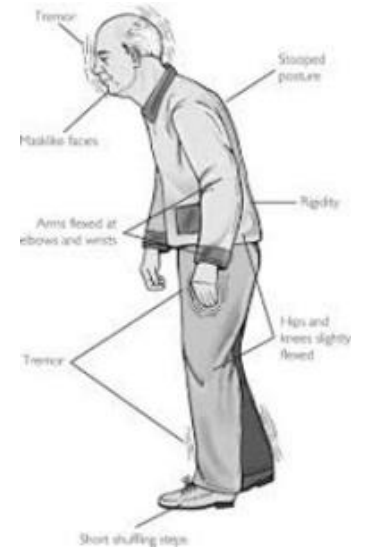
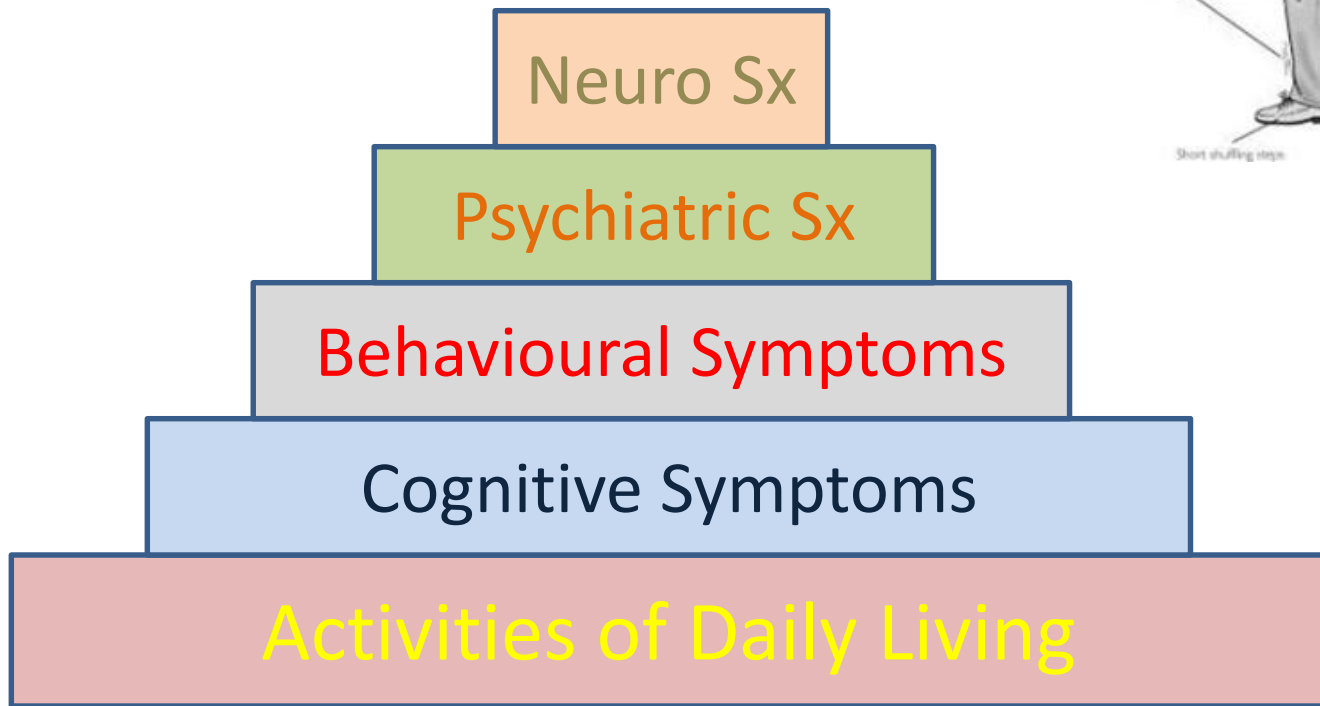


Psychiatric Sx

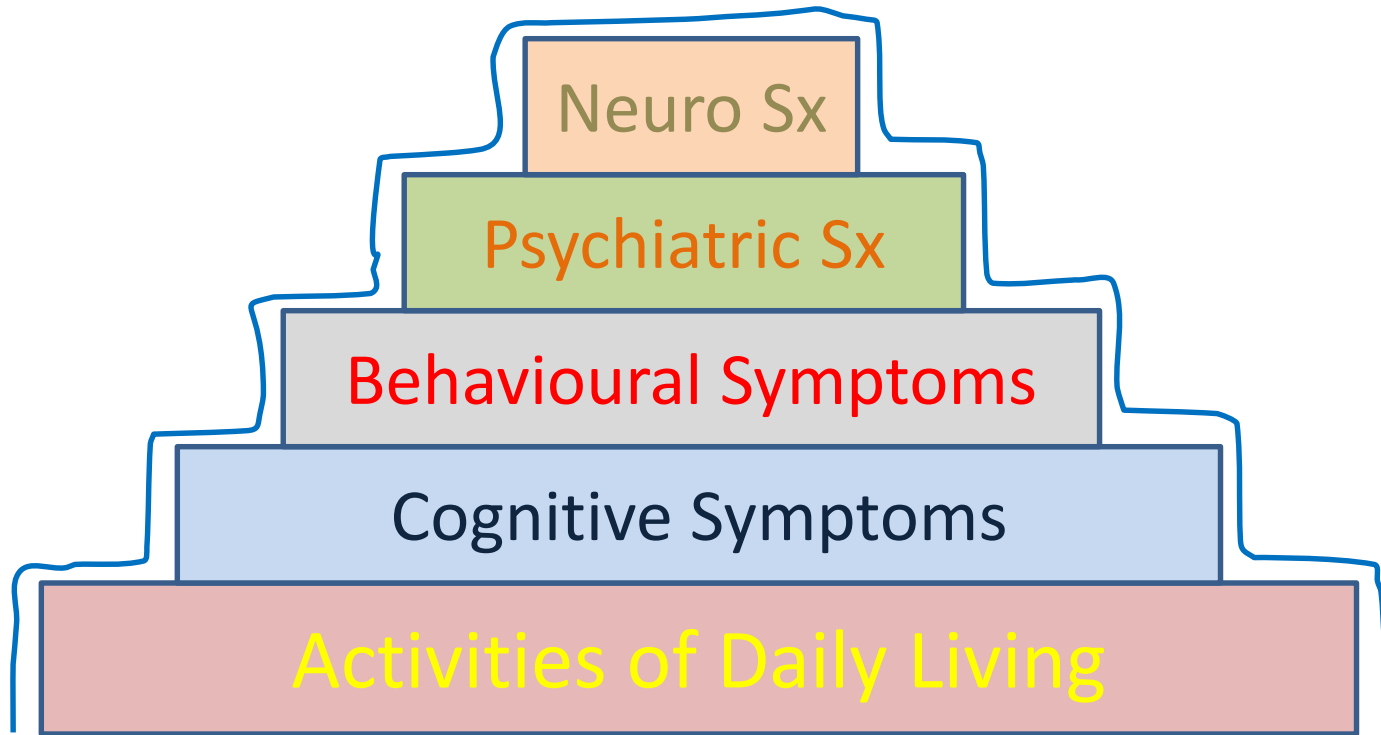
Behavioural Symptoms

Cognitive Symptoms

Activities of Daily Living



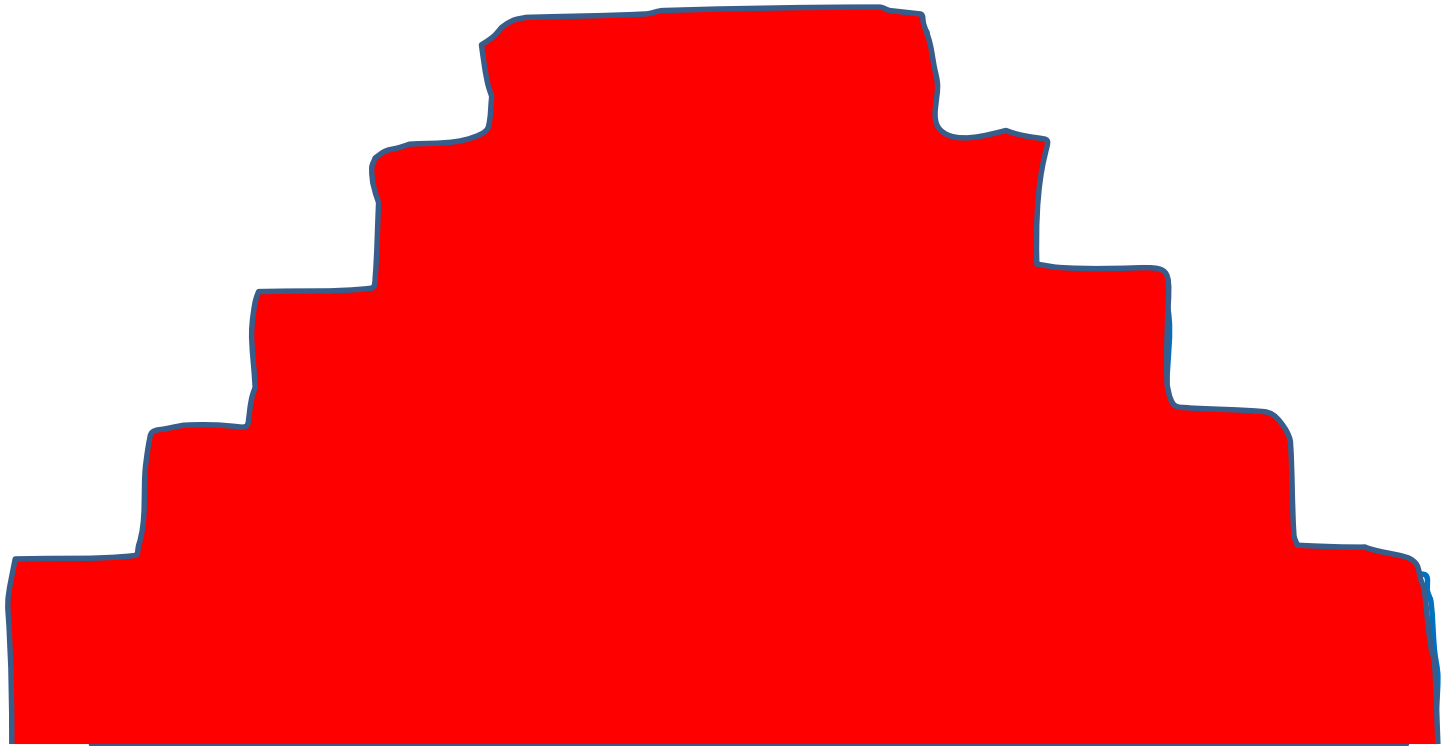
# Risk



# Potential Risks

Harm to self	Harm from others	Harm to others	Other
Delirium	Physical responses to intrusive behaviours	Verbal Aggression	Accommodation loss
Medical illness	Adverse effects of interventions	Physical Aggression	Carer stress
Falls	Elder abuse	Sexual disinhibition	Social isolation
Wandering			Hazardous environment
Accidental injury			
Malnutrition			
Undetected co-morbidity (e.g. drug and alcohol misuse)			
Suicide (esp. in delirium or early stages dementia)			

# Caregiver Burden





# Why is BPSD important

- More than 90% of patients with dementia will experience some of these symptoms.
- Distress caused to people with dementia and to caregivers
- Increased rates of institutionalisation
- Higher rates of complications in hospital
- Faster rate of decline
- Increased mortality

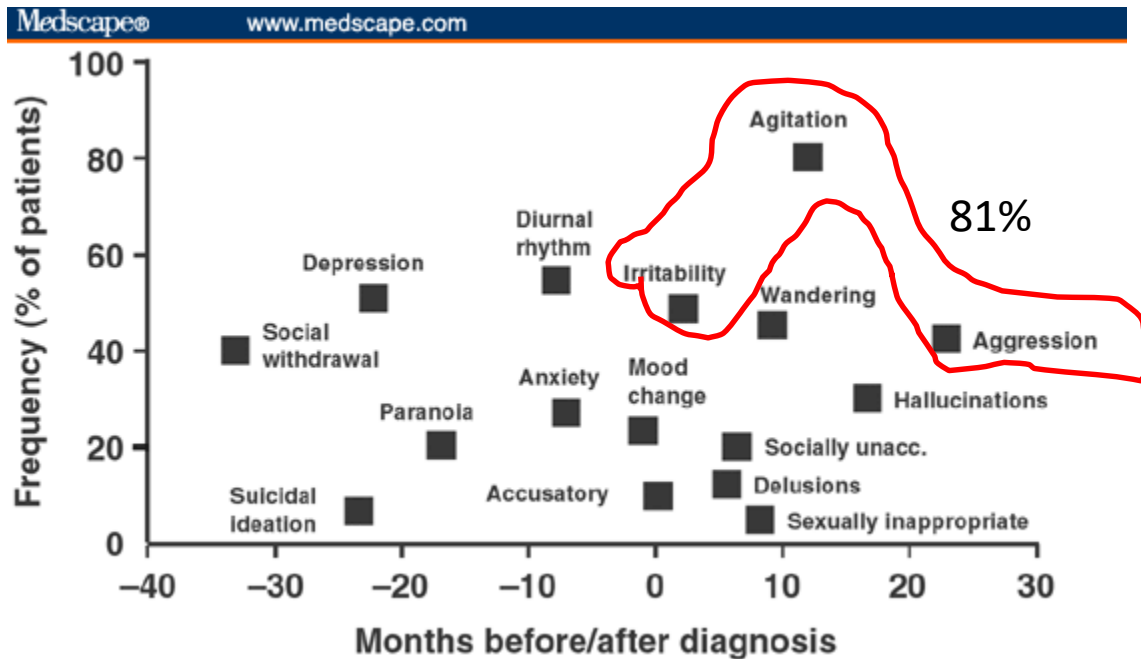
# Effects of BPSD

- Greater use of physical restraint
- Greater use of antipsychotics
- Negative influence on other residents
- Higher cost of institutional care (O'Brien J A et al, 2000)
- Increased stress on nursing staff
  - From aggression (Rodney, 2000)
  - From calling out (Draper et al, 2000)



# Course of BPSD

- Symptoms of BPSD are episodic making prevention and treatment more complex.



Jost BC, Grossberg GT. The evolution of psychiatric symptoms in Alzheimer's disease: a natural history study. J Am Geriatr Society 1996;44:1078-81

# Aetiology of BPSD

Environmental

Interpersonal

Biological

Psychological

# Aetiology of BPSD

Environmental  
vulnerability reduced  
threshold for stress or  
stimuli<sup>1</sup>

Unmet needs; unable  
to comprehend or  
make needs known<sup>2</sup>

Neurological  
deterioration –  
behavioural  
disinhibition<sup>4</sup>

Behavioural: triggers  
and feedback from  
others control  
behaviours<sup>3</sup>

# Case Study

*Valerie, an 89-year-old woman from a local nursing home, was admitted directly to the general medical ward of a hospital because of confusion. In hospital, she has wandered into other patients' rooms seeking her husband. On one occasion when a nurse tried to take her back to her bed, Valerie became very angry and tried to hit the nurse. She later said that all her money had been stolen and she wanted to find out who had taken it.*

*Valerie's son said that she had been moved to the nursing home three years earlier because she had become "senile" and could not care for herself at home. Nursing staff at the facility reported that she did have a tendency to wander aimlessly, including to other residents' rooms, but she was always polite and pleasant, and had never been paranoid. Her memory and wandering had been even worse than usual recently.*



## Assess and treat physical illness

**First Priority**  
Screen for & treat  
Delirium (see Figure 4.1)

Causes:

Physical illness

- Infection
- Metabolic
- Haematological
- Cerebral
- Cardiac
- Endocrine

Toxicity

From

- Medications
- Polypharmacy
- Alcohol/other drugs
- Anaesthesia

Pain

From:

- Constipation
- Wounds, fractures
- Surgery

Sensory  
impairment

Including:

- Hearing
- Vision

### **Vignette**

*Valerie is 89 and experiences behaviour and psychological symptoms of dementia. Her searching for her husband is perceived as aimless and intrusive wandering. When confronted she becomes aggressive.*

### **A = Antecedent**

*Valerie enters another patient's room. Other patient yells and tells Valerie to go to her room. Valerie shouts back at patient and Nurse arrives.*

### **ABC assessment**

### **B = behaviour**

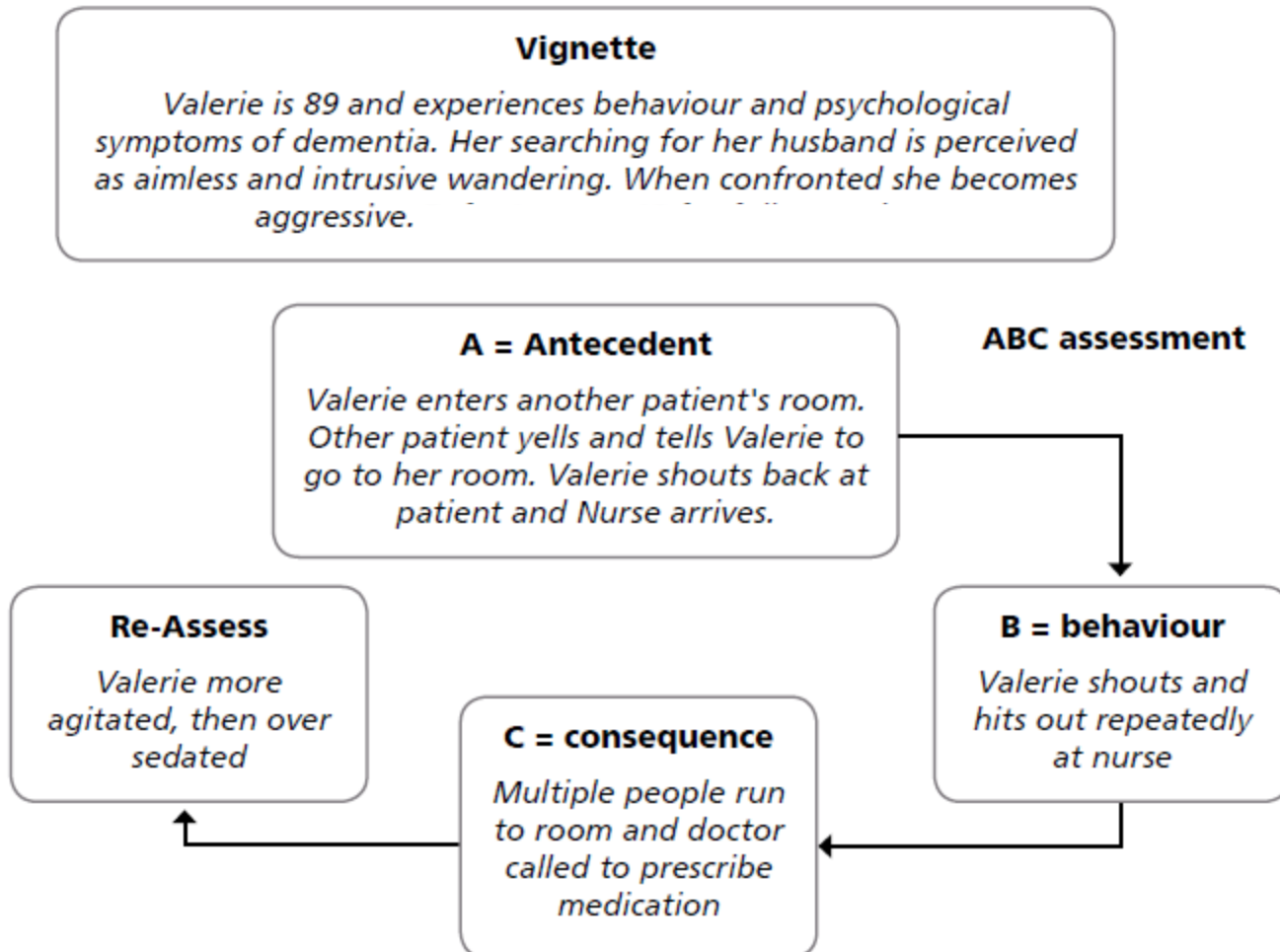
*Valerie shouts and hits out repeatedly at nurse*

### **C = consequence**

*Multiple people run to room and doctor called to prescribe medication*

### **Re-Assess**

*Valerie more agitated, then over sedated*



# ABC Assessment

Date / Time	Antecedent (what happened before the behaviour)	Behaviour (provide details)	Consequence	Re-assess/ Comment
25/12	Entered room 12 Other patient yelled to leave; Valerie yelled back.	Ongoing shouting. When nurse arrived, hit her 4 times with closed fist.	All nurses ran to aid. Doctor called. Increasing agitation Medication given.	26/12. Patient slept 12 hours. Unsteady when she woke.

## Vignette

*Valerie is 89 and experiences behaviour and psychological symptoms of dementia. Her searching for her husband is perceived as aimless and intrusive wandering. When confronted she becomes aggressive.*

### A = Antecedent

- Increased meaningful activity
  - Label her room clearly
  - Person centred approach and communication
- Communication board reminding Valerie that she is in hospital

### ABC modifications

### B = behaviour

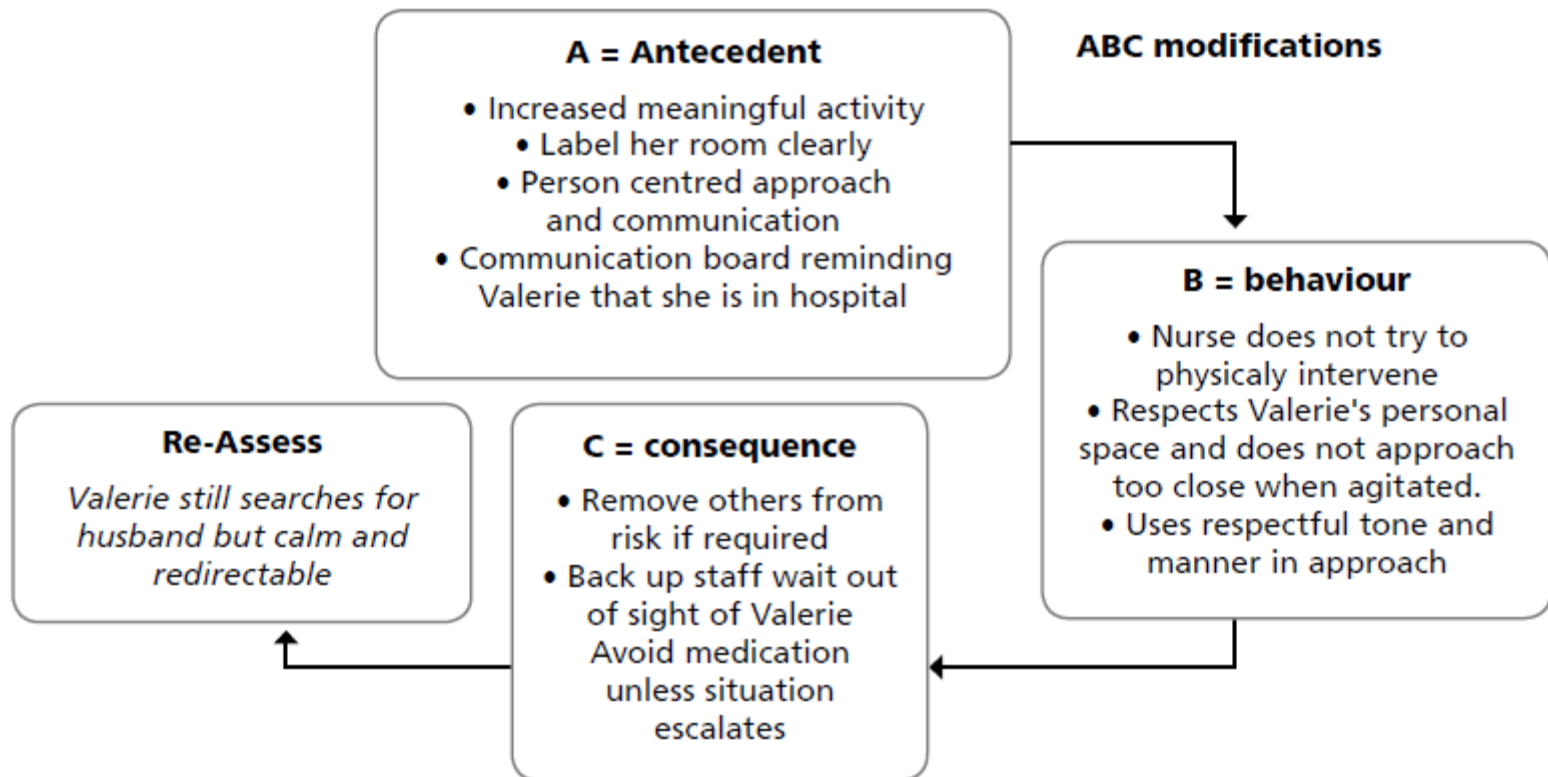
- Nurse does not try to physically intervene
- Respects Valerie's personal space and does not approach too close when agitated.
- Uses respectful tone and manner in approach

### C = consequence

- Remove others from risk if required
- Back up staff wait out of sight of Valerie  
Avoid medication unless situation escalates

### Re-Assess

*Valerie still searches for husband but calm and redirectable*





# Treatment Approach

- In general, non-pharmacological approaches are first-line treatment for behavioural and psychological symptoms of dementia (BPSD).



# Modify environment

- Modify environment rather than person
- Avoid too much or too little stimulation
- Adequate space
- Privacy or personalised space available
- Secure grounds
- Lighting
- Resident mix
- Non institutional



Dementia friendly environments



# Design Principles

**PRINCIPLE 1: Unobtrusively reduce risks**

**PRINCIPLE 2: Provide a human scale**

**PRINCIPLE 3: Allow people to see and be seen**

**PRINCIPLE 4: Reduce unhelpful stimulation**

**PRINCIPLE 5: Optimise helpful stimulation**

**PRINCIPLE 6: Support movement and engagement**

**PRINCIPLE 7: Create a familiar space**

**PRINCIPLE 8: Provide a variety of spaces to be alone or with others**

**PRINCIPLE 9: Provide links to the community**

**PRINCIPLE 10: Support the values and goals of care**



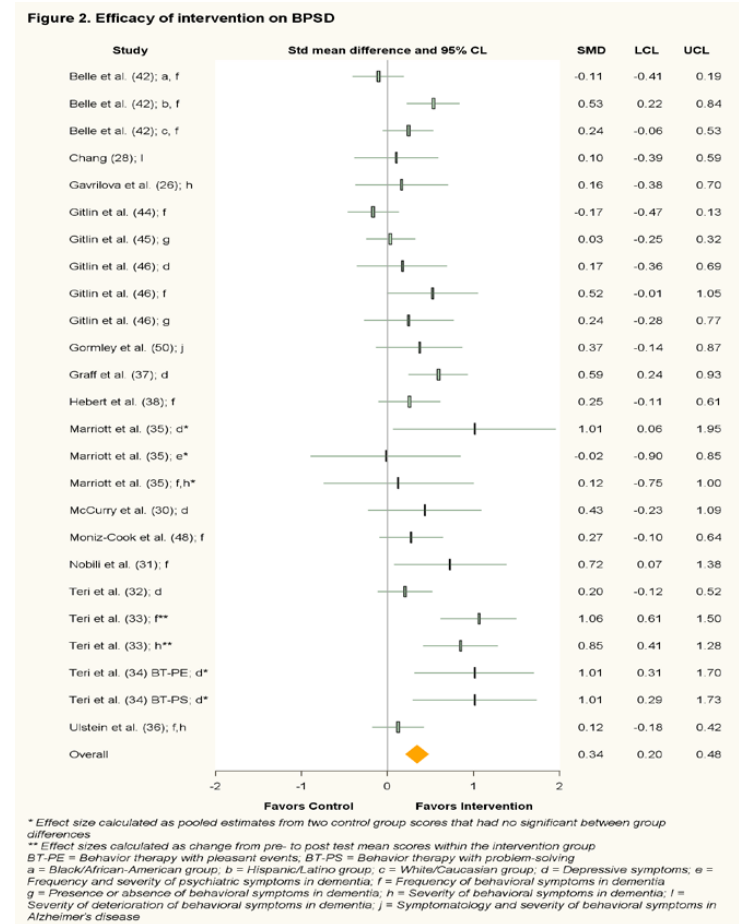
# Interpersonal Research

- Skills training for caregivers eg. improved communication, problem solving, role plays, improved recipient experiences
- Education for caregivers
- Activity planning and environmental redesign
- Enhanced caregiver support
- Self care techniques

Brodaty, Henry, and Caroline Arasaratnam. "Meta-analysis of nonpharmacological interventions for neuropsychiatric symptoms of dementia." *American Journal of Psychiatry* (2012).

# Interpersonal

- Non pharmacologic approaches with strongest evidence base involve family/care giver interventions



Brodaty, Henry, and Caroline Arasaratnam. "Meta-analysis of nonpharmacological interventions for neuropsychiatric symptoms of dementia." *American Journal of Psychiatry* (2012).

# Person centred care, Dementia care mapping

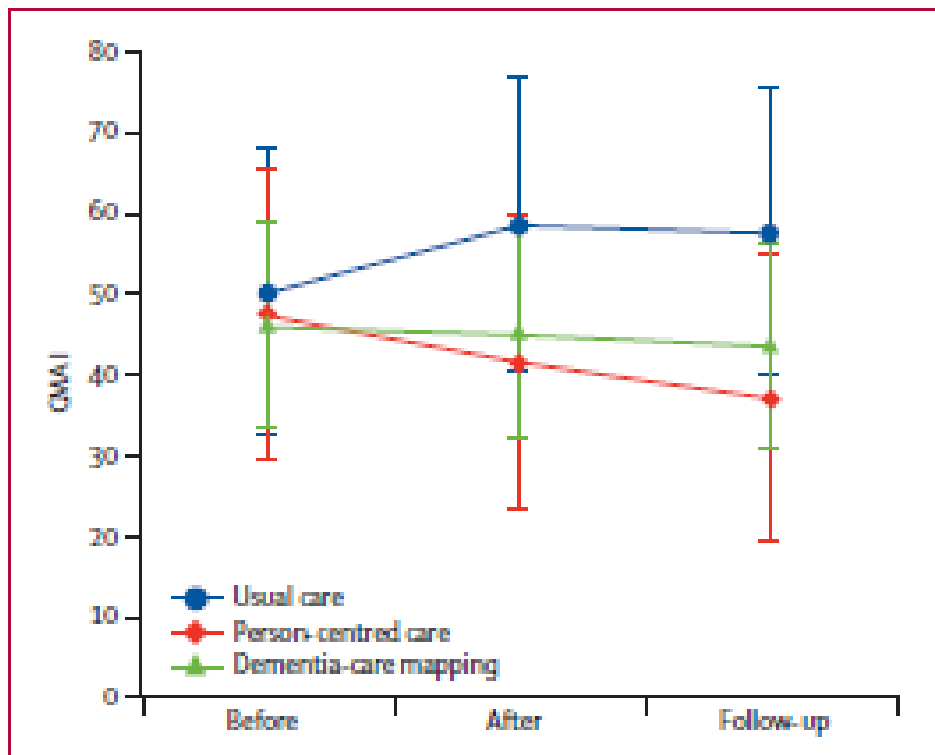


Figure 2: Agitation adjusted for covariates that differed at baseline  
Adjusted mean CMAI scores (95% CI) by intervention group.

## Through the clinician's eyes

Confuses words

Tries to hit out

Tries to get out of bed

Withdrawn/doesn't join in with others

Convinced someone is stealing things from his room

Resists when staff try to assist him with his shower



## Through the person's eyes

People here speak so quickly  
I need time to think of what I am going to say

I'm afraid; I don't know what is happening to me  
I don't know the people here

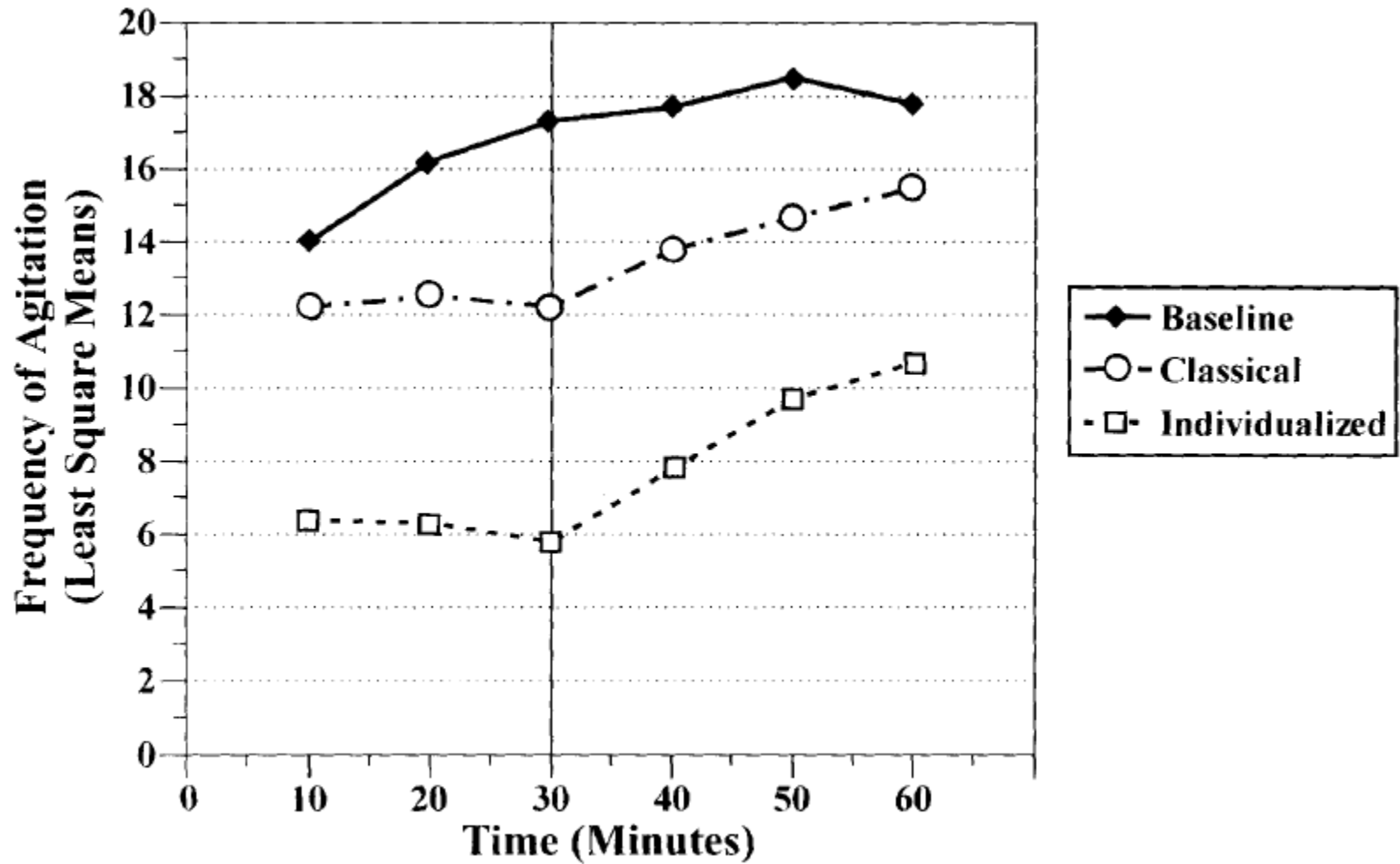
I can't sleep on my own  
I miss my wife

I'm bored and I miss my garden  
These people here are not my friends

I hear things at night. Lights are on during the night  
I can't find my glasses

People here are too busy to help me

# Psychological





# Pharmacology

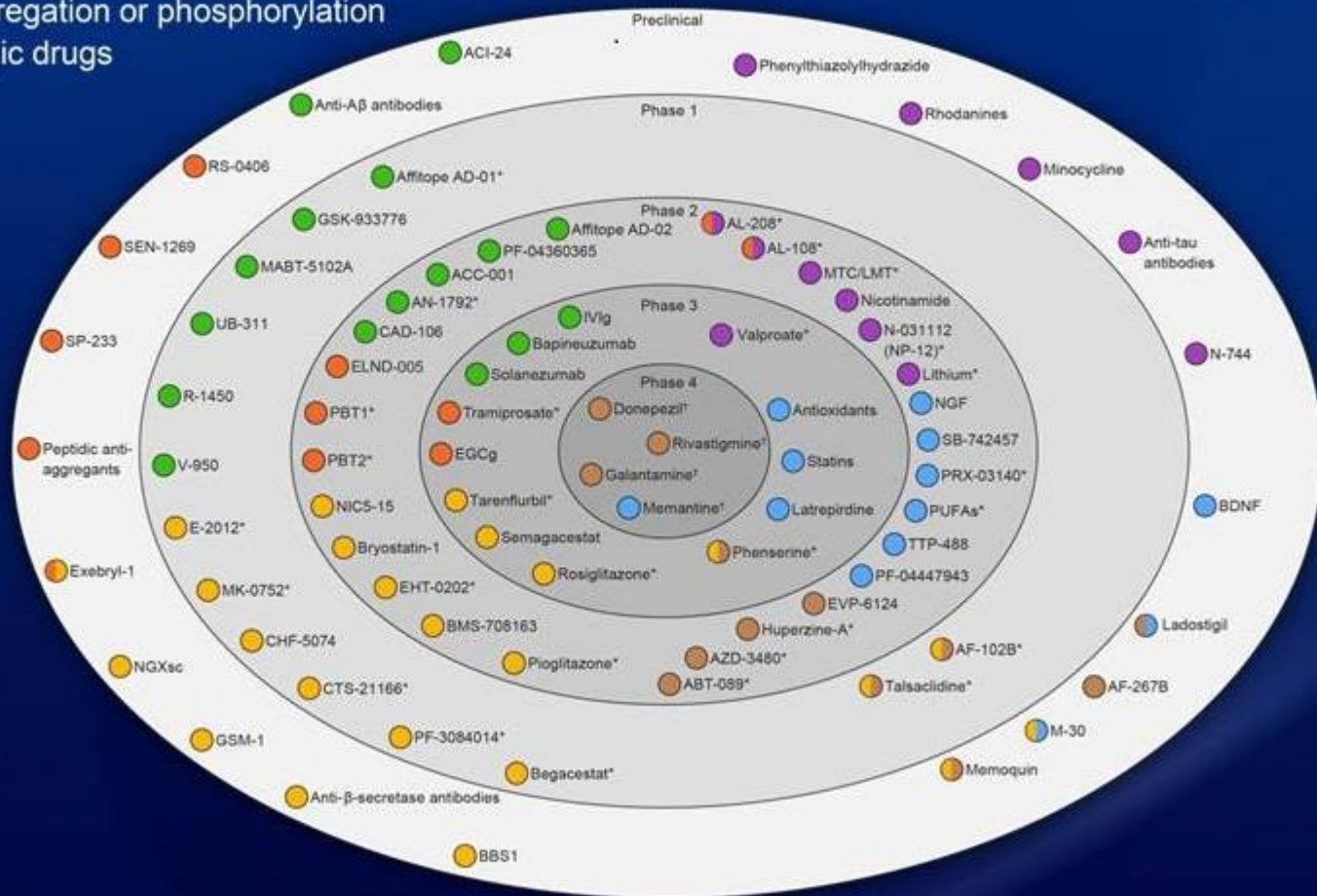
- “Doctors put drugs of which they know little into bodies of which they know less for diseases of which they know nothing at all.”

Voltaire



# Alzheimers Medication Research

- ↓ Aβ production
- ↓ Aβ aggregation
- ↑ Aβ clearance (immunotherapy)
- ↓ tau aggregation or phosphorylation
- Cholinergic drugs
- Others

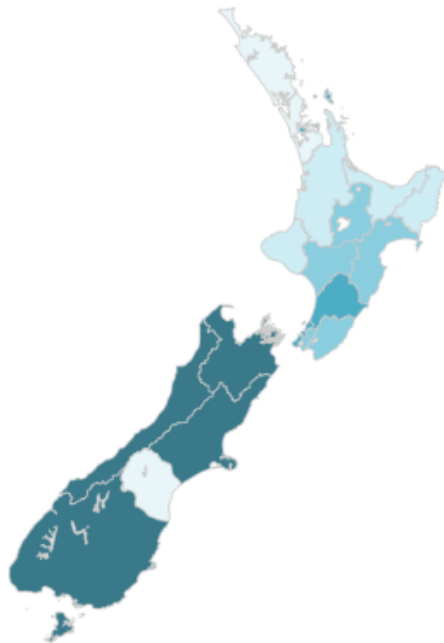


# When is medication indicated?

- Medication is indicated for BPSD that are moderate to severe and that impact on a patient's or caregiver's quality of life, functioning, or that pose a safety concern, often in conjunction with non-pharmacological interventions.

# Atlas of variation

5. People who received an antipsychotic : By age (2014), rate per 1,000 (Aged 75-84)



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DHB & PHO Comments

DHB	Rate	Count
Auckland	30	434
Bay of Plenty	26.8	349
Canterbury	35.5	839
Capital and Coast	29.7	323
Counties Manukau	24.3	383
Hawke's Bay	28.7	239
Hutt	28.7	172
Lakes	28.5	130
MidCentral	29.1	262
Nelson Marlborough	33.1	265
Northland	21.4	189
South Canterbury	22.7	85
Southern	32.4	494
Tairāwhiti	25.7	51
Taranaki	26.1	154
Waikato	24.4	426
Wairarapa	27.3	69
Waitemata	21.6	472
West Coast	43.6	70
Whanganui	27.4	102

# HQSC Atlas of Healthcare Variation | Polypharmacy in older people

Full score Method Help

**Select indicators**

- ▶ 2. People dispensed 5-7 long-term medications
- ▶ 3. People dispensed 8-10 long-term medications
- ▶ 4. People dispensed 11+ long-term medications
- ▼ 5. People who received an antipsychotic
  - ▶ Total by year, rate per 1,000
  - ▶ By ethnicity (2014), rate per 1,000
  - ▼ By age (2014), rate per 1,000
    - Aged 65-74
    - Aged 75-84
    - 85+
  - ▶ By gender (2014), rate per 1,000
- ▶ 6. People who received a benzodiazepine or zopiclone
- ▼ 7. People dispensed both an antipsychotic and benzodiazepine or zopiclone
  - ▶ Total by year, rate per 1,000
  - ▶ By ethnicity (2014), rate per 1,000
  - ▼ By age (2014), rate per 1,000
    - Aged 65-74
    - Aged 75-84**
    - 85+
  - ▶ By gender (2014), rate per 1,000
- ▶ 8. People dispensed both an antiplatelet and anticoagulant

## 7. People dispensed both an antipsychotic and benzodiazepine or zopiclone : By age (2014), rate per 1,000 (84)



**Bar chart: By age (2014), rate per 1,000 (Aged 75-84)**



Chart series / Commentar

Chart series: 7. People dispensed



# Antipsychotic and Zopiclone use

Chart series: 5. People who received an antipsychotic : By age (2014), rate per 1,000 (Aged 65-74)

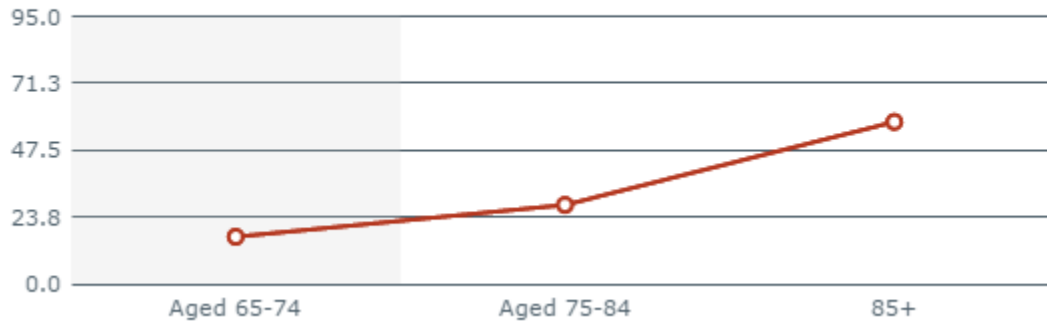
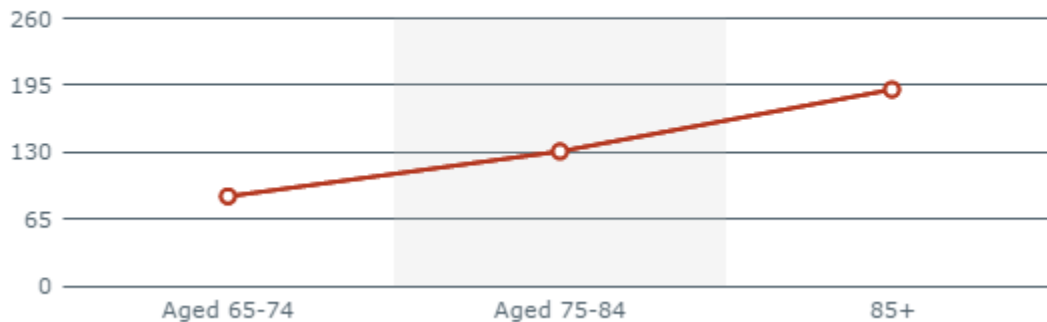
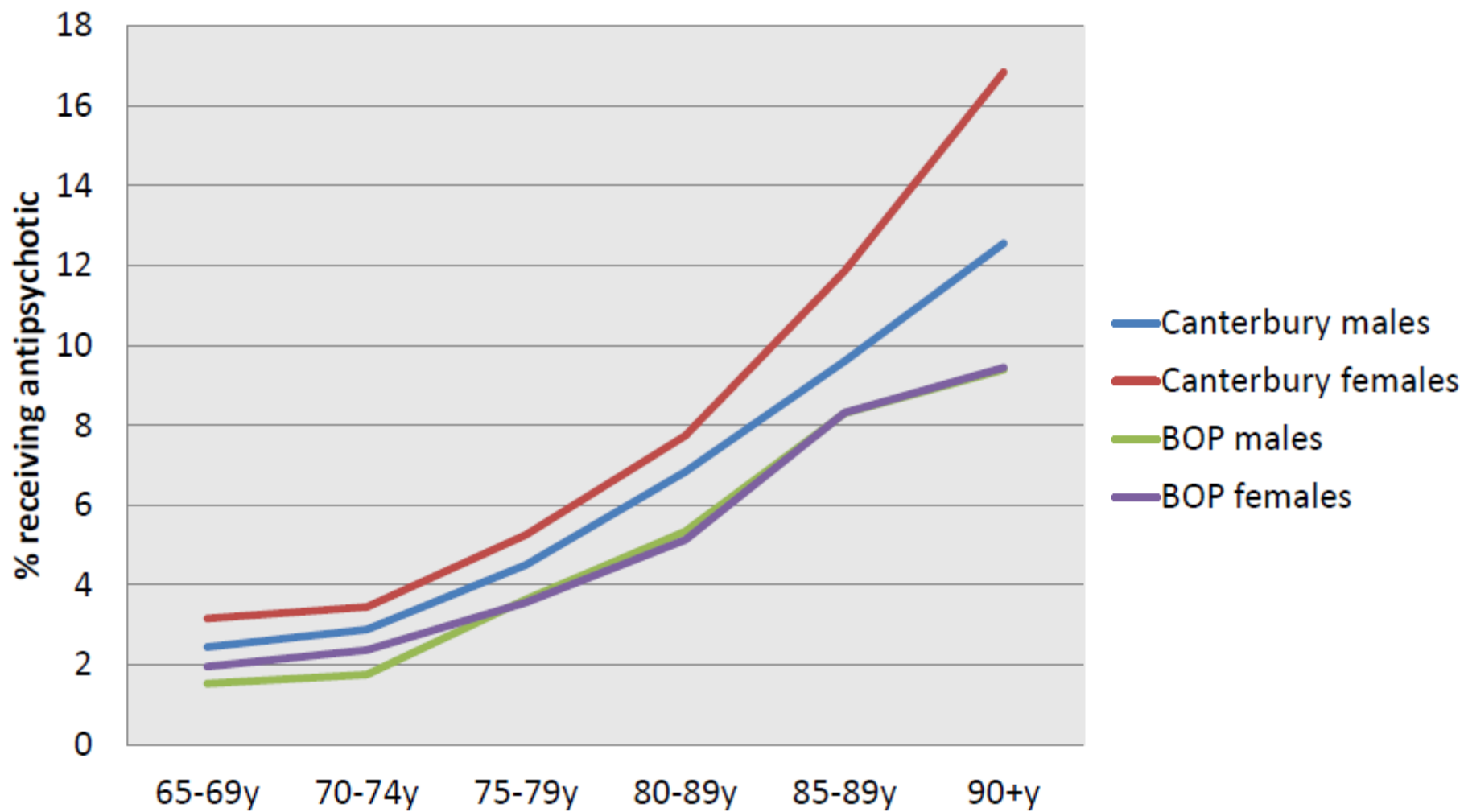


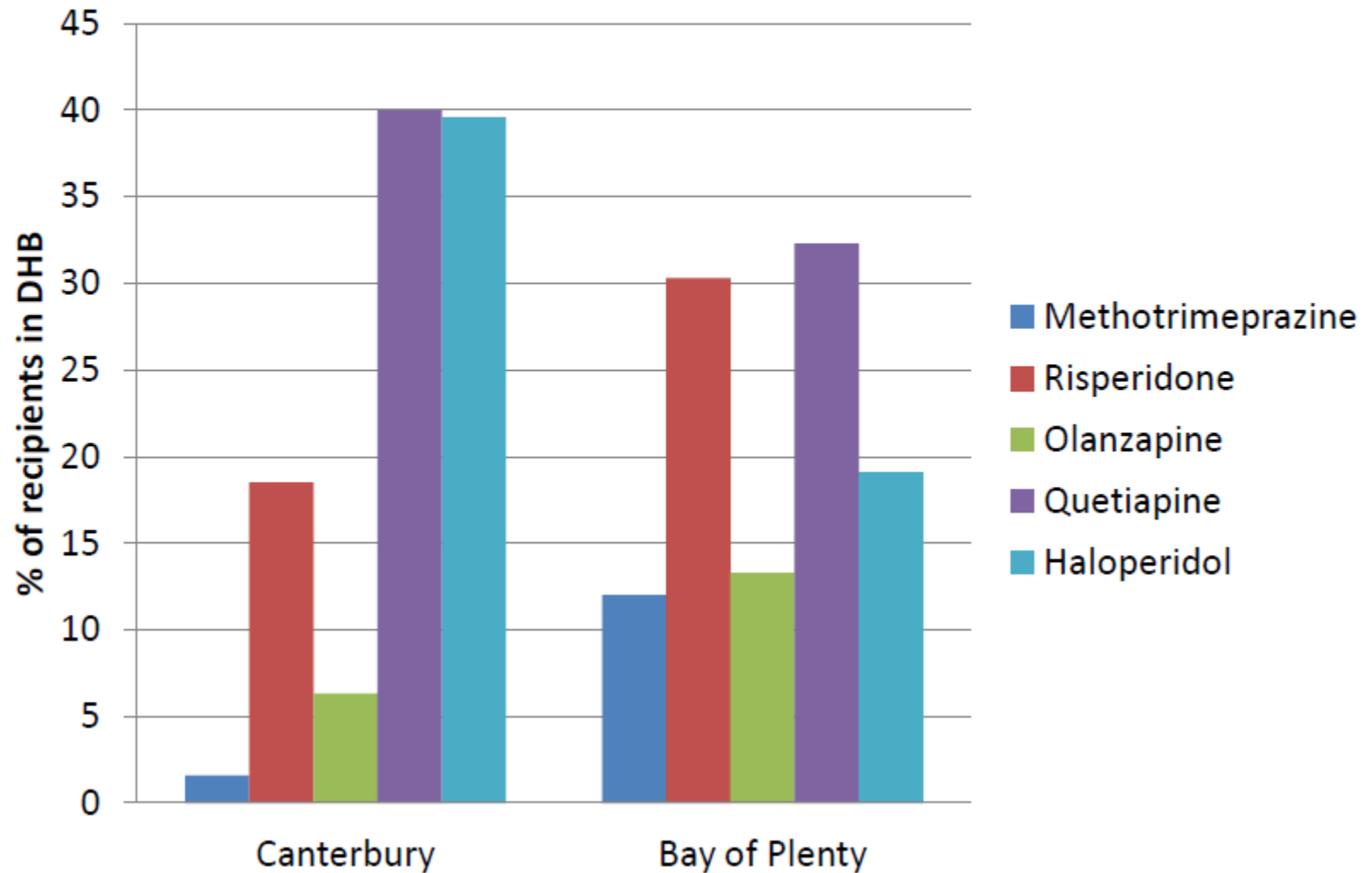
Chart series: 6. People who received a benzodiazepine or zopiclone : By age (2014), rate per 1,000 (Aged 75-84)



# Who is receiving antipsychotics?

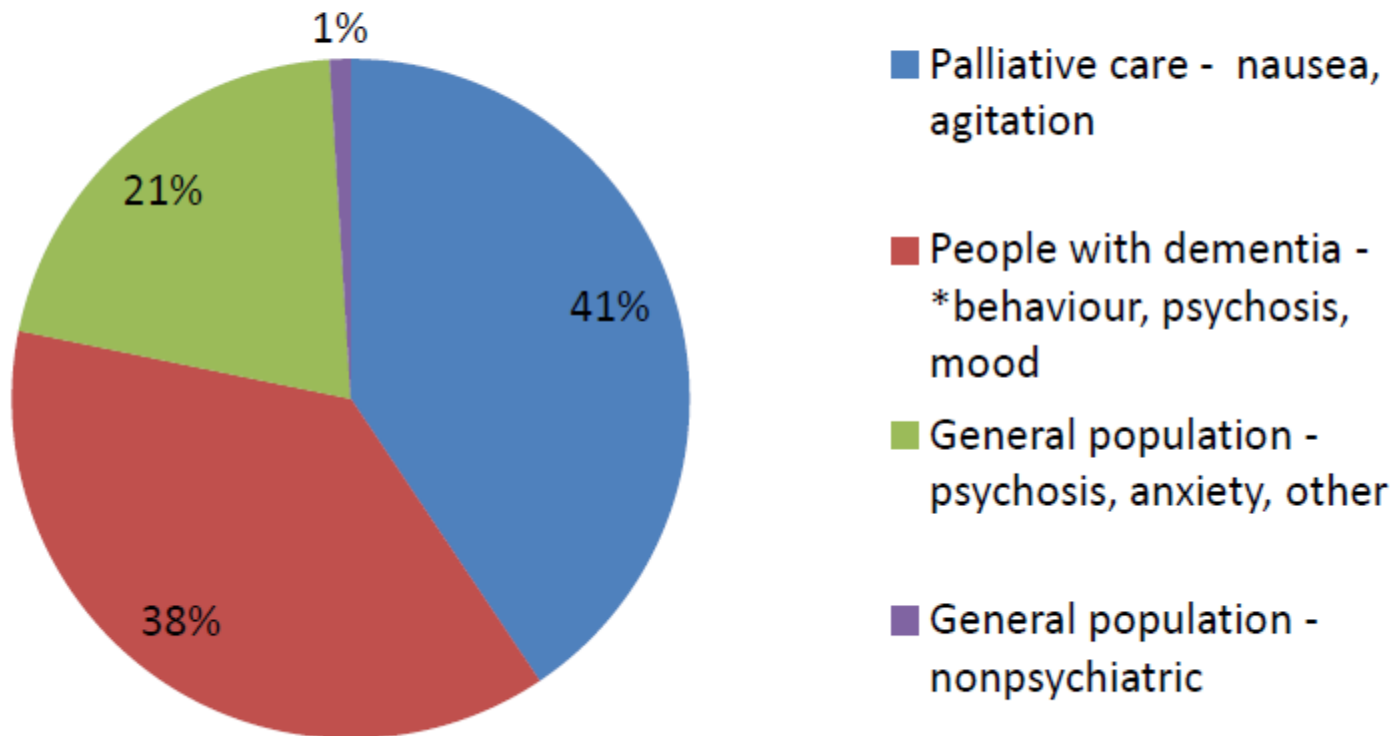


# What antipsychotics are being prescribed?





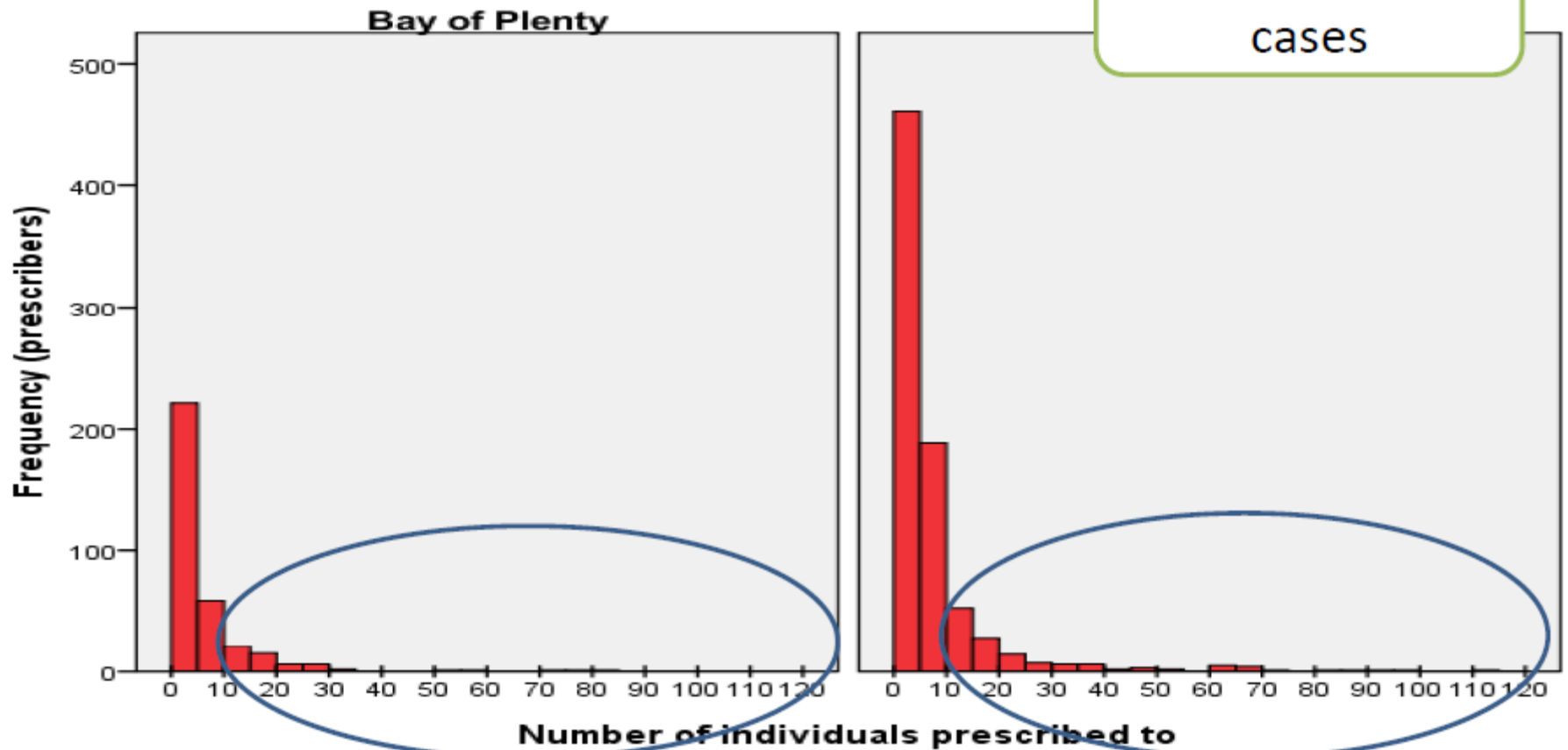
# What is the context for the prescription?



# Who is prescribing?

Approx 1/7

Involved in  $\frac{3}{4}$  of cases



# Antipsychotics

- CATIE- AD large-scale public health study using newer, atypical antipsychotic medications for the treatment of delusions, hallucinations, aggression and agitation in AD dementia
- Important because it considered situations outside residential care
- Follow-up was greater than 12 weeks

# Antipsychotics

- 421 participants across 42 sites
- Participants were ambulatory and still living at home or in assisted living facilities
- Family members also participated
- 56% female, average age 78, 73% in own home

# Antipsychotics

- placebo-controlled, double-blind,
- randomized to three antipsychotic medications (olanzapine, quetiapine, and risperidone) or placebo (inactive pill).

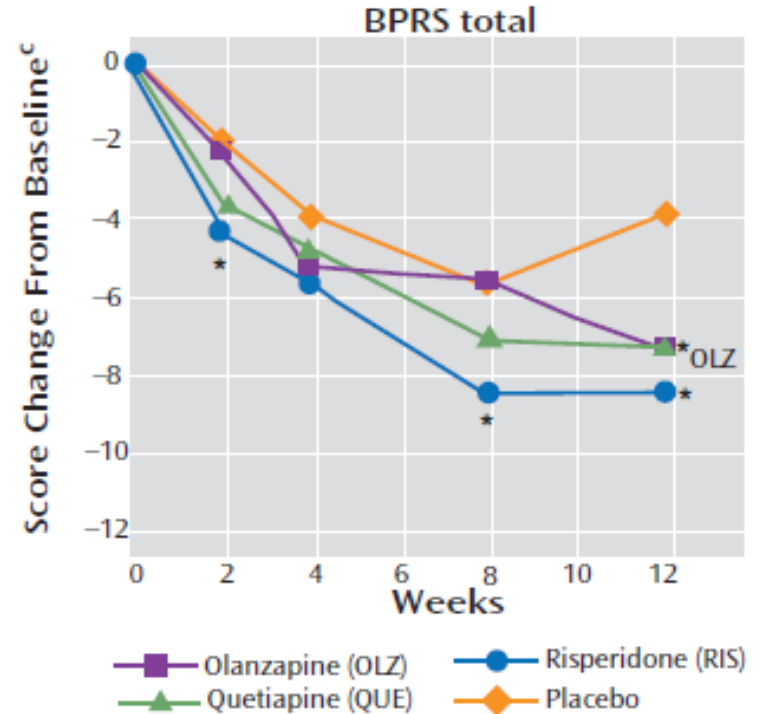
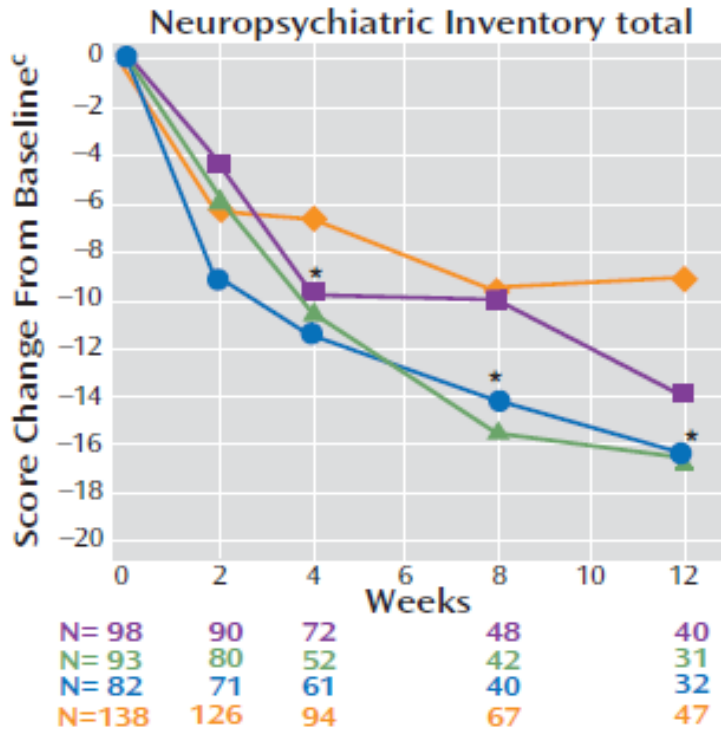
# Biological

- During Phase 1, doctors could adjust a participant's dose based on the participant's individual needs and continue for 36 weeks.
- If no benefit then discontinue meds and enter Phase 2
- Phase 2 of the study. Trial on a random basis a different antipsychotic medication

# Antipsychotics

- Researchers used the length of time patients stayed on their assigned treatments as the primary measure of treatment success.
- Final doses
  - olanzapine (5.5 mg/d)
  - quetiapine (56.5 mg/d)
  - risperidone (1 mg/d)

# Antipsychotics





# Antipsychotics

- In phase 1, there were no differences in the length of time in treatment among any of the four treatment groups.
- Those taking olanzapine and risperidone were less likely to cite lack of benefit as a reason to discontinue use.
- Participants assigned one of the three antipsychotic medications were more likely to discontinue use because of intolerable side effects than those taking placebo.

# Antipsychotics

- the overall benefit of these medications is offset by intolerability to associated side effects
- Although some patients may benefit greatly from these medications, the evidence from this study suggests these medications hold limited value for the majority of patients.

# Limitations to CATIE-AD

- **Suboptimal therapy** - low dosages could have resulted in suboptimal or inadequate responses. mean daily dose of quetiapine (56.5 mg) is
- **Choice of outcome** -Time until discontinuation of treatment was selected as primary outcome. How to compare with trials using psych scales?
- **Low event rates** - Event rate was low for cerebrovascular events and death, one must take care to not over-interpret data.
- **Generalizability** - is limited by this study's inclusion of only patients with Alzheimer disease (eg, excluding those with vascular dementia and dementia with Lewy bodies) and of outpatients only (rather than inpatients).

# Withdrawal of antipsychotics

- There are several randomized, placebo-controlled studies examining the effects of discontinuing long-term treatment with antipsychotics<sup>1</sup>
- Predictors of successful discontinuation antipsychotics
  - include lower daily doses of antipsychotics.<sup>2</sup>
  - lower baseline severity of behavioural symptoms.<sup>3</sup>

1. (van Reekum et al., 2002; Cohen-Mansfield et al., 1999; Ruths et al., 2008; Ballard et al., 2008)

2. (van Reekum et al., 2002; Ruths et al., 2008)

3. (Ballard et al., 2008).

# Overall for antipsychotics

- Both atypical and typical antipsychotics appear to carry an increased risk for mortality and stroke in patients with dementia. These should be prescribed only after discussing risks and benefits, and their use should be re-evaluated frequently when prescribed.
- Atypical antipsychotics are preferred over typical antipsychotics for BPSD.

# Overall for antipsychotics

- Antipsychotic medications are most effective in the treatment of psychotic symptoms (hallucinations, delusions), agitation, and aggression.
- All patients should be informed of the potential risks associated with pharmacological treatments of BPSD and monitored accordingly.

# Cognitive Enhancers

- Cholinesterase inhibitors and memantine may be useful in treating BPSD; these medications may also provide cognitive benefits unlike other medications.



"Yeah, they really, really work. Got any other stupid questions?"

# Cholinesterase inhibitors

## Systematic review & meta-analysis

- 29 RCTs with mild-moderate AD
- BPSD: cholinesterase inhibitor group
- 1.72 points on NPI (6 trials) &
- 0.03 on ADAS-noncog (10 trials) vs placebo
- Modest benefit on BPSD

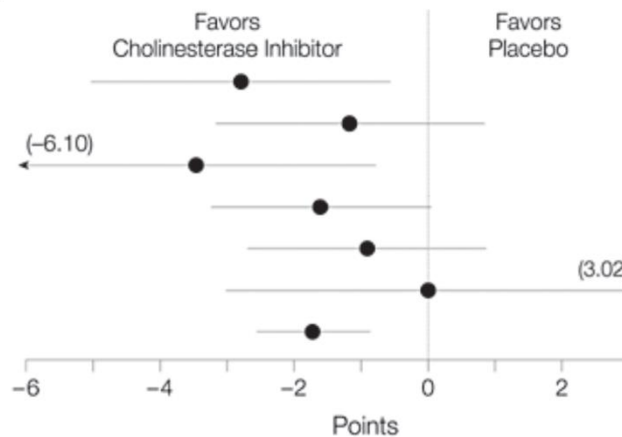
## Individual symptoms > response

- – Apathy, hallucinations



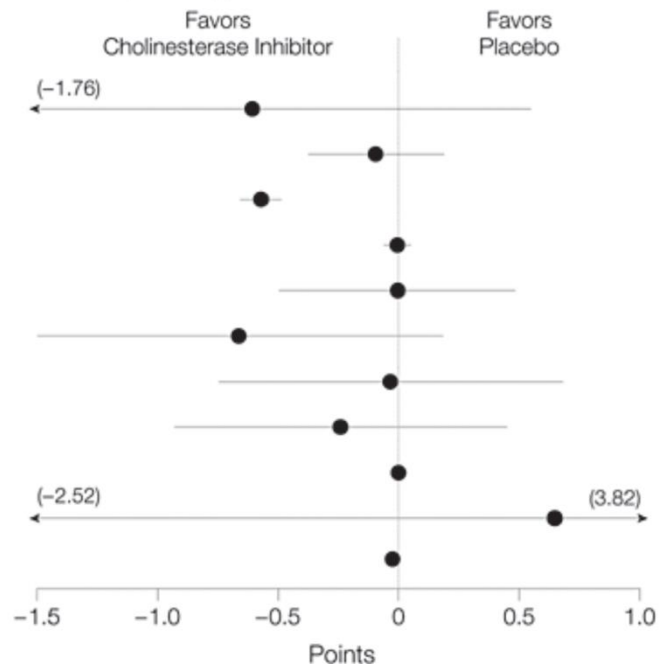
**A** Neuropsychiatric Inventory

Morris et al,<sup>26</sup> 1998  
 Dubois et al,<sup>33</sup> 1999  
 Raskind et al,<sup>35</sup> 1999  
 Tariot et al,<sup>23</sup> 2000  
 Rockwood et al,<sup>24</sup> 2001  
 Winblad et al,<sup>41</sup> 2001  
 Summary Effect



**B** Alzheimer Disease Assessment Scale, Noncognitive

Davis et al,<sup>45</sup> 1992  
 Farlow et al,<sup>27</sup> 1992  
 Knapp et al,<sup>25</sup> 1994  
 Wood,<sup>39</sup> 1994  
 Forette et al,<sup>28</sup> 1995  
 Becker et al,<sup>29</sup> 1996  
 Zemlan et al,<sup>32</sup> 1996  
 Becker et al,<sup>22</sup> 1998  
 Jann et al,<sup>38</sup> 1999  
 Moller et al,<sup>34</sup> 1999  
 Summary Effect



# Antidepressants

- Antidepressants may be used in for the treatment of agitation in dementia as well as for depression in dementia.



# Antidepressants

## Antidepressants in dementia

Modest evidence of efficacy of antidepressants in treatment of depression in dementia<sup>1,2</sup>

- OR = 2.32, 95%CI: 1.04-5.16
- Best evidence is for sertraline (and citalopram)
- AD may be more responsive than VaD

Some evidence that citalopram useful for agitation, psychosis 3,4, 5

Further trials needed

- eg combining drug & psychosocial treatment

1 Bains et al. (2002). Cochrane Review; Issue 4;

2 Thompson et al. (2007) Can J Psychiatry; 52: 248-255;

3 Pollock et al. (2007). Am J Geriatr Psych; 15: 1-11;

4 Pollock B et al, 2002;

5 Nieth and Gottfries, 1990.

# Antidepressants

- Sertraline for treatment of depression in AD: Wk-24 Outcomes (DIADS-2)
- 67 Sertraline, 64 placebo; 12 wk RCT + 12 wk
- No between-groups diff. in depression response
  - in CSDD score
  - remission rates
  - secondary outcomes
- SSRI associated > adverse events of diarrhoea, dizziness, dry mouth

# Antidepressant vs Antipsychotic

## Citalopram vs Risperidone

- 12 wk RCT of 103 Ss with dementia:
- – 53 citalopram, 50 risperidone
- Significant decrease in agitation score (Neurobehavioural Rating Scale) for citalopram, but not risperidone
- Citalopram & risperidone both decreased psychosis scores (suspiciousness, hallucinations and delusions)
- Pollock et al. (2007). Am J Geriatr Psych; 15: 1-11

# Biological

- Anticonvulsant medications, especially carbamazepine, may be an option for the treatment of agitation when other medications have failed;
- Current evidence does not favour the use of valproic acid.

I'm confused.  
*No wait...*  
*Maybe I'm not.*

# Takeaway Points

1. BPSD is complex and requires a good understanding of biological, interpersonal, environmental and psychological factors to make an appropriate intervention.
2. Think non pharmacological first
3. When starting medications consider the target symptoms, monitor and consider when the medication might be stopped.



# The End

