GERIATRIC CASES

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21/2/2026

Health New Zealand
Te Whatu Ora

Greenlane
Medical Specialists

Case One

- 79 NZ European lady
- Referred for cognitive changes Mar 2025
- Seen in clinic Jun 2025, diagnosed with moderate dementia pending CT head for subtype
- Seen by MHSOP for BPSD Sep 2025, diagnosed with Alzheimer's Dementia, for Donepezil if ECG does not show contraindication
- Clinic review Jan 2026

Case One

- Other past medical history:
  - Weight loss secondary to poor oral intake
  - Osteoporosis on DEXA
  - Hyperlipidaemia
  - Hypertension

Case One

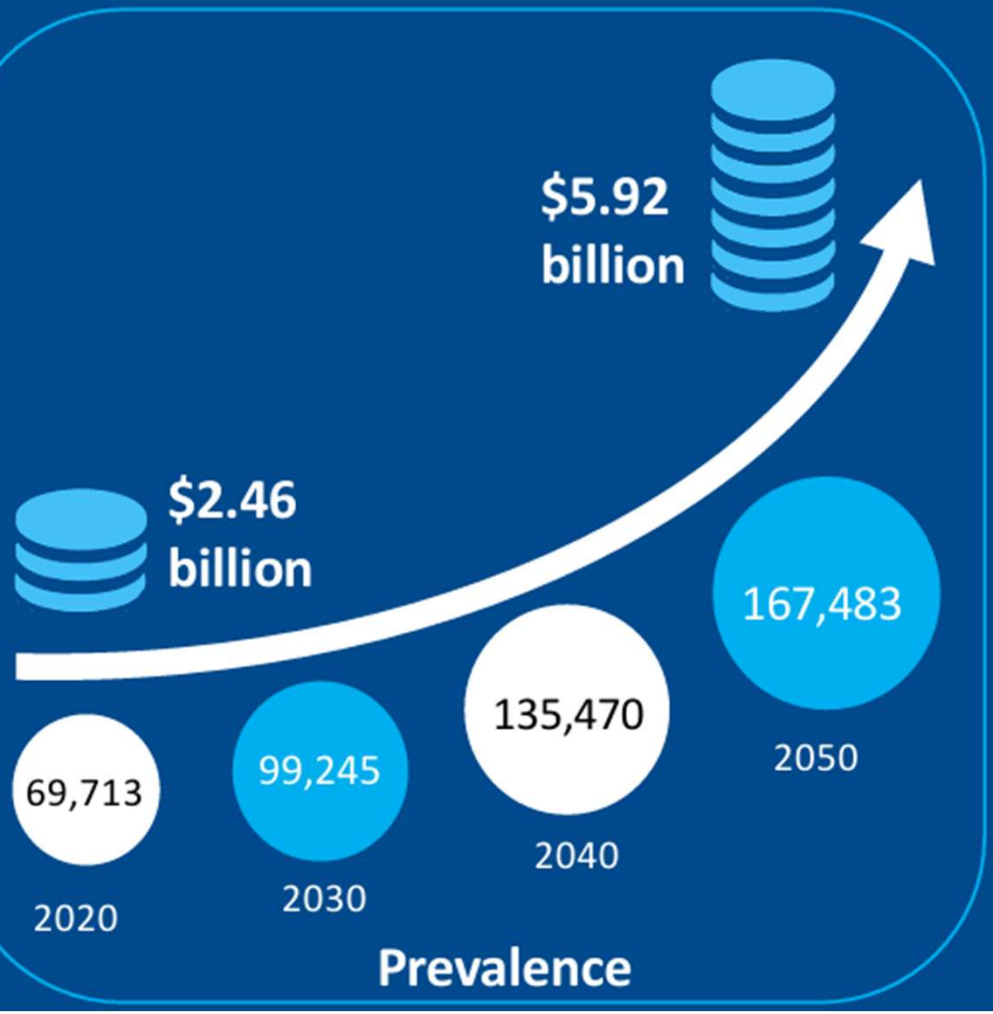
- Medications:
  - Atorvastatin
  - Colecalciferol
  - Lisinopril
  - Donepezil

Case One

- Social situation:
  - Lives at home with younger son who has intellectual disability. Elder son holds EPOA but lives up North.
  - Younger son is against medications and has thrown out her Donepezil
  - Independent mobility and personal cares
  - Advised against driving
  - Short term memory rapidly deteriorating

Dementia: a rapidly growing problem for Aotearoa NZ

September 2021



Alzheimer’s Dementia

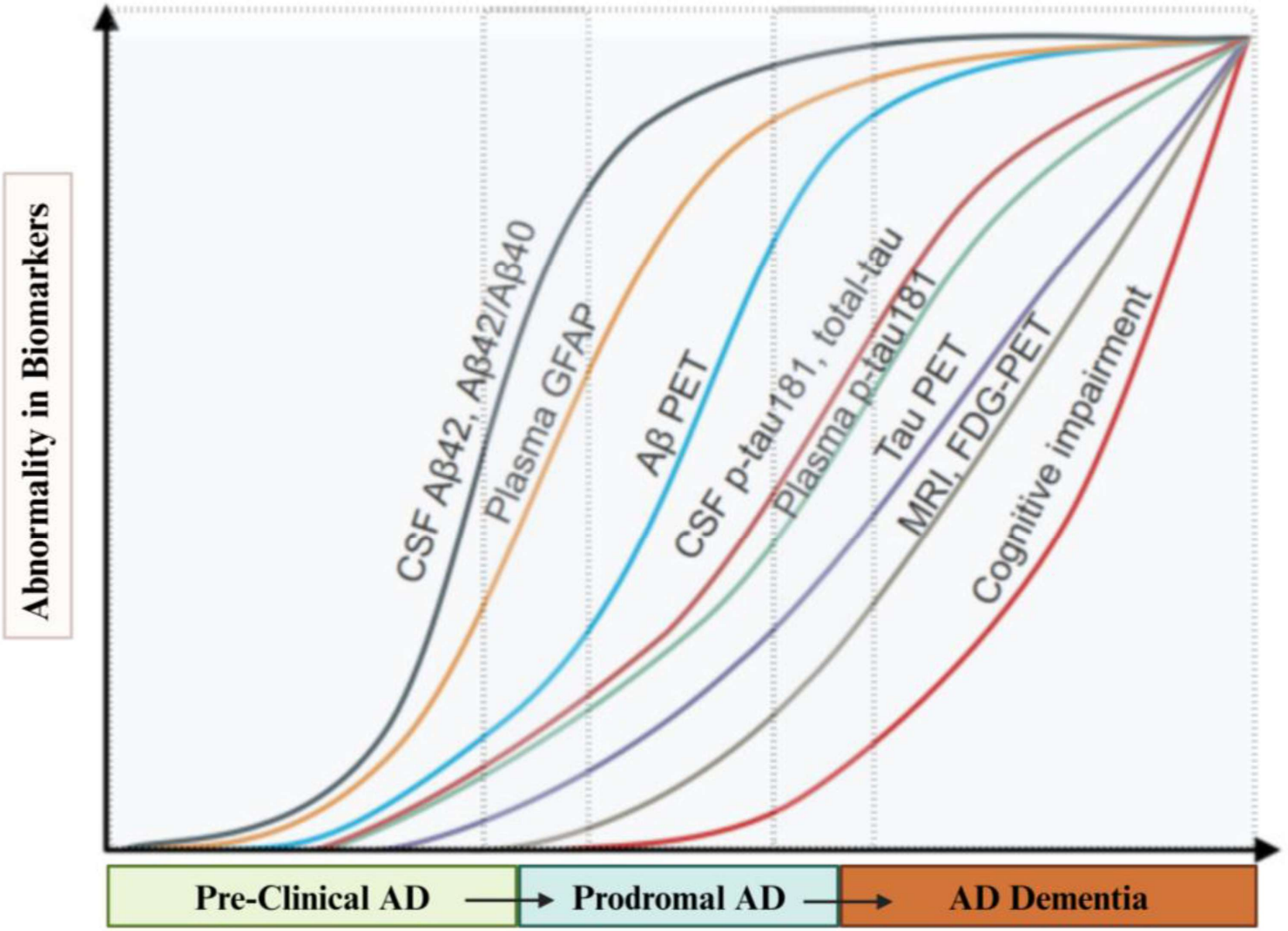
- 60-80% including mixed
- DSM-V

DSM-5 criteria for major neurocognitive disorder due to Alzheimer disease

A. Evidence of significant cognitive decline from a previous level of performance in one or more cognitive domains*:
Learning and memory.
Language.
Executive function.
Complex attention.
Perceptual-motor.
Social cognition.
B. The cognitive deficits interfere with independence in everyday activities. At a minimum, assistance should be required with complex instrumental activities of daily living, such as paying bills or managing medications.
C. The cognitive deficits do not occur exclusively in the context of a delirium.
D. The cognitive deficits are not better explained by another mental disorder (eg, major depressive disorder, schizophrenia).
E. There is insidious onset and gradual progression of impairment in at least two cognitive domains.
F. Either of the following:
Evidence of a causative Alzheimer disease genetic mutation from family history or genetic testing.
All three of the following are present:
1) Clear evidence of decline in memory and learning and at least one other cognitive domain.
2) Steadily progressive, gradual decline in cognition, without extended plateaus.
3) No evidence of mixed etiology (ie, absence of other neurodegenerative disorders or cerebrovascular disease, or another neurological, mental, or systemic disease or condition likely contributing to cognitive decline).

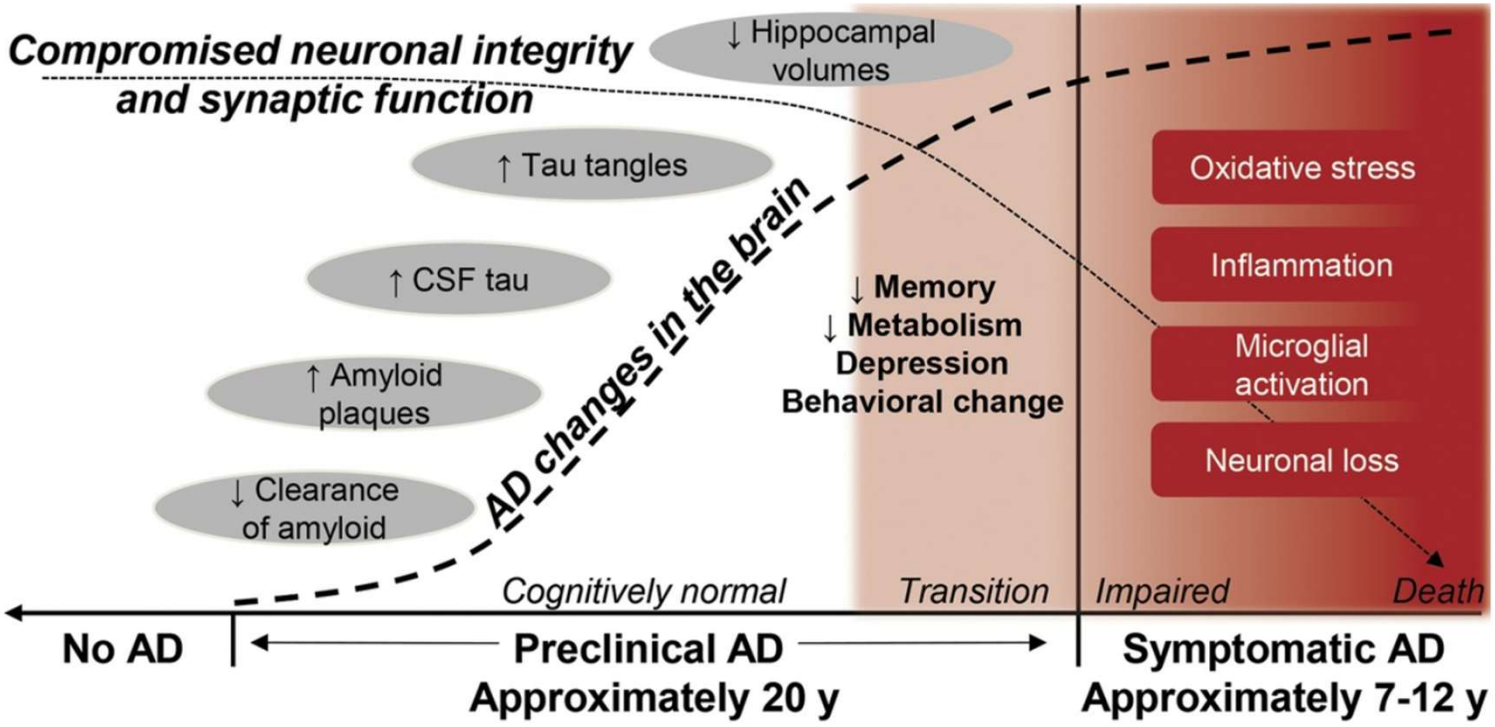
Alzheimer's Dementia

- 60-80% including mixed
- DSM-V
- 2011 NIA-AA criteria, with 2018 and 2024 revisions
  - Paradigm shift from syndromic to biologic definition guided by new biomarkers



Int. J. Mol. Sci. 2024, 25(20), 10911

Pathological changes in AD



A/T/N: An unbiased descriptive classification scheme for Alzheimer disease biomarkers

- "A/T/N" model of amyloid biomarkers:
  - Developed in 2016, used to classify biomarkers
  - **A = amyloid, T = tau, N = neurodegeneration**
  - Amyloid positivity refers to CSF amyloid-β_{42}, or amyloid PET
  - Tau positivity refers to CSF phospho-tau, or tau PET
  - Markers of neurodegeneration include FDG-PET, CSF total tau, structural MRI

Jack et al, Neurology 2016

TABLE 1.

Categorization of fluid analyte and imaging biomarkers.

Biomarker category	CSF or plasma analytes	Imaging
Core Biomarkers		
Core 1		
A (Aβ proteinopathy)	Aβ 42	Amyloid PET
T_1 : (phosphorylated and secreted AD tau)	p-tau217, p-tau181, p-tau231	
Core 2		
T_2 (AD tau proteinopathy)	MTBR-tau243, other phosphorylated tau forms (e.g., p-tau205), non-phosphorylated mid-region tau fragments[a]	Tau PET
Biomarkers of non-specific processes involved in AD pathophysiology		
N (injury, dysfunction, or degeneration of neuropil)	NfL	Anatomic MRI, FDG PET
I (inflammation) Astrocytic activation	GFAP	
Biomarkers of non-AD copathology		
V vascular brain injury		Infarction on MRI or CT, WMH
S α-synuclein	αSyn-SAA[a]	

Jack CR Jr et al. Revised criteria for diagnosis and staging of Alzheimer's disease: Alzheimer's Association Workgroup. Alzheimers Dement. 2024 Aug;20(8):5143-5169. doi: 10.1002/alz.13859. Epub 2024 Jun 27. PMID: 38934362; PMCID: PMC11350039.

Imaging biomarkers

Feature	**SPECT**	**PET**
Full name	Single Photon Emission CT	Positron Emission Tomography
Resolution	Lower	Higher
Quantification	Semi-quantitative	Quantitative
Measures	Perfusion	Metabolism or pathology
AD specificity	Low	Moderate–high
Amyloid detection	❌ No	✅ Yes
Tau detection	❌ No	✅ Yes
Role today	Supportive	Diagnostic & therapeutic

Imaging biomarkers

Modality	Availability in NZ	Typical Use
FDG PET-CT	✔️ Available at private and mobile units	Functional brain imaging; may assist in differential dementia diagnosis
Amyloid PET	⚠️ Limited / research contexts	Pathological confirmation of Alzheimer’s (rare clinical use)
Tau PET	⚠️ Very limited / research	Research or advanced tertiary settings
CSF biomarkers	✔️ Available clinically	Alzheimer’s molecular confirmation

Disease modifying treatments

- Anti-amyloid monoclonal antibodies
  - Donanemab – Trailblazer study
  - Lecanemab – Clarity study
- Therapies for mild cognitive impairment and early stage AD
- New data suggests continued improvement for those started early in disease trajectory

Cognitive enhancers

- Cholinesterase inhibitors
  - Donepezil
  - Rivastigamine
- Memantine
- Mood and substance abuse

BPSD

- Non-pharmacological
  - Explore expectations.
    - A reasonable treatment goal is reduction, rather than cessation of the challenging behaviour
  - Most behaviours the carer finds challenging arise from the patient's needs.
    - for whom is this behaviour or state a problem?
  - Capture and review the behaviour with the carer
    - Tools eg ABC (antecedent / behaviour / consequence) chart
    - Encourage attempts at meeting the need through trial and error.
  - Dementia Auckland

BPSD

- Pharmacological
  - Antidepressants
  - Cholinesterase inhibitors
  - Melatonin
  - Psychotropics

Capacity

- The six step capacity assessment process
  1. Identify the reason for assessing capacity
  2. Engage the person being assessed in the process
  3. Gather information to describe the context, choices and their consequences
  4. Educate the person about the context, choices and their consequences
  5. Assess capacity
  6. Take action based on results of the assessment

Capacity

- Step 1: Identify the reason for assessing capacity
  - Is the capacity assessment necessary?
  - Clinical or legal reason to assess capacity?
  - What is the least restrictive option?
  - Whether the process is in the best interests of the patient.

Capacity

- Step 2: Engage the person being assessed in the process
  - Prepare the right setting - Environment, timing
    - Ensure adequate time has been allocated for the assessment
  - Invite support people to be present if appropriate
    - Consider undue influence
  - Patient at baseline state