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# Strategies for earlier detection of dementia (and a bit more)

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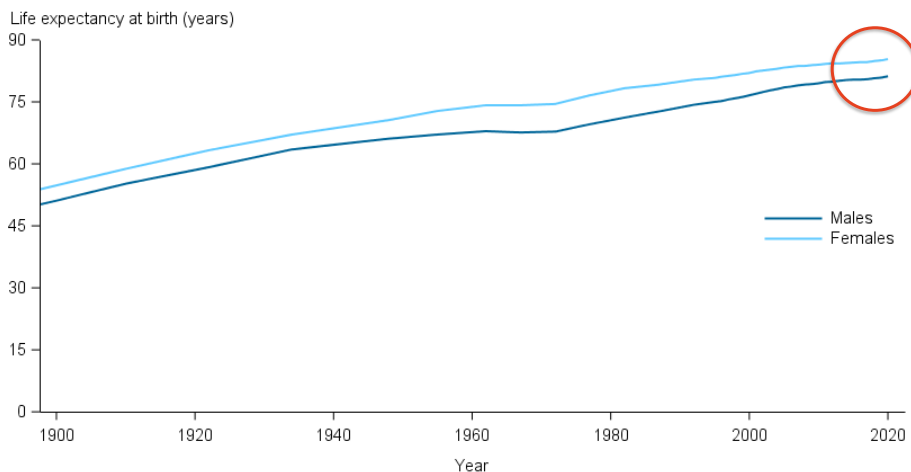


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## Life expectancy in Australia

**Men: 81.2 years**

**Women: 85.2 years**



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## The effect of normal ageing on brain function

- Gradual decline in working memory tasks but reasonable maintenance of vocabulary, general knowledge, and occupational expertise
- Decline in ability to multi-task
- Decline in reasoning speed eg finding most efficient way through a maze
- Difficulty remembering names
- **Day to day function not impaired**



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## The effects of MCI on brain function

- **Mild cognitive impairment:**
- previously known as:
  - benign senescent forgetfulness
  - age associated memory decline
- subjective complaints of memory loss with early clear cut deficits on objective examination. May be decreased performance in demanding employment and social situations, but **no** significant changes in day to day function
- cognitive testing using standard tests such as Addenbrooke's Cognitive Examination or Montreal Cognitive Assessment may indicate some impairment
- may consider use of neuropsychological assessment if available
- 10 -12% per year go on to develop dementia
- 5 – 10% revert to normal

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## The effects of dementia on brain function

- **Dementia:** progressive irreversible syndrome of impaired memory, intellectual function, personality and behaviour, **causing significant impairment in function**
- **See:**
  - Decrease in short term memory functioning
  - Loss of vocabulary
  - Inability to do calculations
  - Shortened attention span
  - Impaired visuospatial processing
  - Poor reasoning ability
  - Changes in personality
- **Aka** Major neurocognitive disorder (DSM5)
- **Mild dementia** – difficulties with a number of areas such as memory, planning, organisation and personal care, but the person can still function with minimal assistance
- **Moderate dementia** – difficulties become more severe and increasing levels of assistance are required to help the person maintain functioning in their home and in the community.
- **Severe or advanced dementia** – almost total dependence on care and supervision by others

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## Dementia is common

- Approx 46 million people around the world have dementia, with approximately 450,000 in Australia currently
- **9% over age 65 (1 in 12)**
- **22% over age 80 (1 in 4)**
- **35% over age 85 (1 in 3)**
- highest cause of death for women in Australia, 2<sup>nd</sup> highest for men
- BUT also see in younger people, with around 27,000 people under age 65 in Australia having dementia

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## Causes of dementia

- Alzheimer's Disease
- LATE – limbic predominant age associated TDP43 encephalopathy
- Vascular Dementia
- “Mixed” Dementia (Alzheimer's Disease, LATE and Vascular Dementia)
- Dementia with Lewy Bodies
- Frontotemporal Dementia (aka Frontotemporal Lobar Degeneration)
- Parkinson's Disease with Dementia
- Others – PART – primary age related tauopathy, chronic traumatic encephalopathy (footballers brain), prion disease.....

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## Other causes of cognitive disorders

- Many different causes for cognitive disorders other than MCI and dementia/Alzheimer's disease
  - Cerebrovascular disease
  - Psychiatric diagnoses
  - Sub-acute delirium
  - Intellectual disability
  - Functional Cognitive Disorder
  - Traumatic Brain Injury
  - Hypoxic brain injury
  - Alcohol related brain damage

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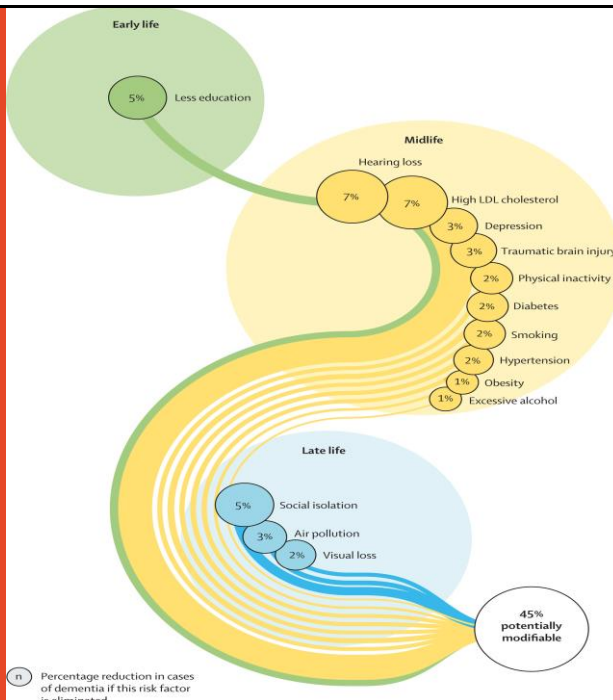
**UPDATE**
**Functional cognitive disorder: dementia's blind spot**

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An increasing proportion of cognitive difficulties are recognized to have a functional cause, the chief clinical indicator of which is internal inconsistency. When these symptoms are impairing or distressing, and not better explained by other disorders, this can be conceptualized as a cognitive variant of functional neurological disorder, termed functional cognitive disorder (FCD). FCD is likely very common in clinical practice but may be under-diagnosed. Clinicians in many settings make liberal use of the descriptive term mild cognitive impairment (MCI) for those with cognitive difficulties not impairing enough to qualify as dementia. However, MCI is an aetiology-neutral description, which therefore includes patients with a wide range of underlying causes. Consequently, a proportion of MCI cases are due to non-neurodegenerative processes, including FCD. Indeed, significant numbers of patients diagnosed with MCI do not 'convert' to dementia. The lack of diagnostic specificity for MCI 'non-progressors' is a weakness inherent in framing MCI primarily within a deter-

**Approximately 45% of dementia is preventable**

# Lancet Commission on Dementia July 2024



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## Dementia prevention – modifiable risk factors

1 Physical inactivity	2 Smoking	3 Excessive alcohol consumption	4 Air pollution
5 Head injury	<b>12 dementia risk factors</b>	6 Infrequent social contact	8 Obesity
7 Less education		9 Hypertension	11 Depression
10 Diabetes		12 Hearing impairment	

**Plus:**  
Visual impairment  
Elevated LDL Cholesterol

Source: Livingston et al. A, et al. Dementia prevention, intervention, and care: 2020 report of the Lancet Commission

[www.alzint.org](http://www.alzint.org)



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## Dementia prevention – physical exercise

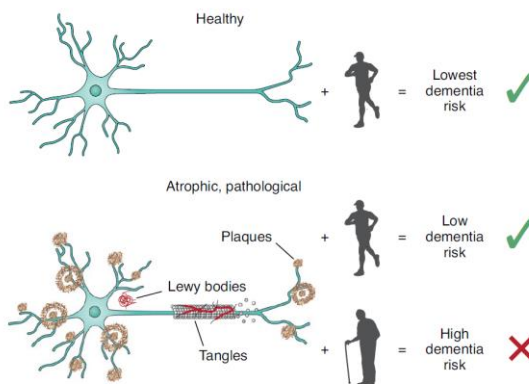
- 30 minutes of aerobic exercise e.g. brisk walking, jogging, cycling, swimming, dancing, 5 times a week
- Resistance training
  - gym program with heavy weights
  - home program of sit to stand and hand weights, other exercises utilizing body weight
- Balance training
  - Stand on one leg
  - Tandem stance and walk



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## The influence of physical function and frailty on expression of dementia

- The pathological changes of Alzheimers disease are present in the brain for up to 20 years before the emergence of symptoms
- The presence/absence of physical frailty moderates the risk of dementia development and the presence of clinical dementia



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## Dementia prevention – keeping mentally and socially active

- **Keep mentally and socially active:**
  - Interpersonal relationships are very important with family and friends
- **Suggestions:**
  - Develop mental activities and social networks
  - Learn a new language, play a musical instrument, play cards, mahjong
  - Join: Mens' sheds, "Stitch and bitch", U3A, Probus
  - Become a volunteer
  - Attend concerts, theatre, galleries



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## Dementia prevention - dietary interventions

- The **Mediterranean diet** emphasizes fruits, vegetables, whole grains, legumes, fish and other seafood, unsaturated fats such as olive oils, and low amounts of red meat, processed meats, and cakes and sweets
- The **MIND (Mediterranean–DASH Intervention for Neurodegenerative Delay)** diet is a hybrid of the Mediterranean and the DASH (Dietary Approaches to Stop Hypertension) diets. Similar to the Mediterranean diet, the MIND diet features vegetables, especially green leafy vegetables; berries over other fruit; whole grains; beans; nuts; one or more weekly servings of fish; and olive oil. It also limits servings of red meat, sweets, cheese, butter/margarine, and fast/fried food
- Consider ensuring adequate protein such as 2 eggs/day (if cholesterol not a major issue) and adding skim milk powder or WPI (whey protein isolate).



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## Evidence for prevention

- Early prevention RCTs such as the FINGER Study (2015, 2020) from Finland suggest that a multi domain intervention of exercise, diet, cognitive activity and monitoring BP and cholesterol, may improve or maintain cognitive functioning in at risk older people. There are similar ongoing studies in multiple countries
- Cohort studies internationally have shown decreasing incidence of dementia when comparing 2 groups of older people 10 years apart. This is thought to be due to better control of risk factors such as BP, and higher education levels
- Recent study from China (2023) showed healthy diet, regular physical exercise, active social contact, active cognitive activity, not smoking, and never drinking alcohol was associated with slower cognitive decline, and a similar French study (2022) (which included 1-2 drinks of alcohol/day) showed similar findings

**If we can't prevent it, why is it  
important to detect it early?**

## Why is early detection important?

- Gives time to make plans for the future including POA and EG, advance care planning, preparation to retire from driving
- ensuring their partner or family are involved in planning for future eg moving to more appropriate home or closer to family or services
- If still working need to work towards retirement
- Tick off bucket list activities
- Interventions to slow disease progress can start earlier eg exercise, mental activity, social interaction
- If monoclonal antibodies (Mabs) become available in Australia they will only be appropriate very early in Alzheimer's disease process

## Early detection and diagnosis of dementia

1. Refer to Clinical Practice [Guidelines](#) and Principles of Care for People with Dementia
2. Use Dementia Australia's [national helpline](#) for advice and practice support early in the diagnosis stage
3. Initiate dementia screening and objective cognitive testing when symptoms first appear. The Montreal Cognitive Assessment is more thorough than the Mini Mental State Examination
4. Compile a differential diagnosis. Drugs with anticholinergic side effects and infection can cause delirium while deficiency in vitamin B12, depression and anxiety, and thyroid dysfunctions (both hypo and hyperthyroidism) can cause cognitive impairment
5. Encourage positive conversations about dementia early in the disease progression
6. When evaluating day-to-day function, ask patients how they are managing with a computer, mobile phone, or the TV remote control. Can they still follow a recipe? Do they get lost while driving?
7. Involve family members in consultations and ask them if they have noticed any changes to their relative's cognition
8. Consider a second opinion from a geriatrician or neurologist, a memory clinic and/or refer patient to Dementia Australia
9. Recognise that while most patients with dementia will present with short-term memory problems, some will only present with anxiety and depression
10. As dementia becomes more advanced, refer to [Dementia Support Australia](#) for behaviour management advice


# Montreal Cognitive Assessment

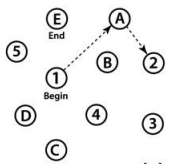
<https://mocacognition.com/>


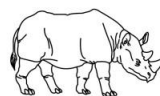
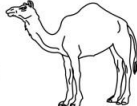


**MONTREAL COGNITIVE ASSESSMENT (MOCA)**  
Version 7.1 Original Version

NAME: \_\_\_\_\_ Education: \_\_\_\_\_ Date of birth: \_\_\_\_\_  
Sex: \_\_\_\_\_ DATE: \_\_\_\_\_

**VISUOSPATIAL / EXECUTIVE**  Copy cube [ ] Draw CLOCK (Ten past eleven) (3 points) [ ]

 [ ] [ ] [ ] [ ] [ ]

**NAMING**  [ ]  [ ]  [ ]

**MEMORY** Read list of words, subject must repeat them. Do 2 trials, even if 1st trial is successful. Do a recall after 5 minutes.

	FACE	VELVET	CHURCH	DAISY	RED	Points
1st trial	[ ]	[ ]	[ ]	[ ]	[ ]	No points
2nd trial	[ ]	[ ]	[ ]	[ ]	[ ]	No points

**ATTENTION** Read list of digits (1 digit/ sec.). Subject has to repeat them in the forward order [ ] 2 1 8 5 4  
Subject has to repeat them in the backward order [ ] 7 4 2

Read list of letters. The subject must tap with his hand at each letter A. No points if ≥ 2 errors  
[ ] F B A C M N A A J K L B A F A K D E A A A J A M O F A A B

Serial 7 subtraction starting at 100 [ ] 93 [ ] 86 [ ] 79 [ ] 72 [ ] 65  
4 or 5 correct subtractions: 3 pts. 2 or 3 correct: 2 pts. 1 correct: 1 pt. 0 correct: 0 pt.

**LANGUAGE** Repeat: I only know that John is the one to help today. [ ]  
The cat always hid under the couch when dogs were in the room. [ ]

Fluency / Name maximum number of words in one minute that begin with the letter F [ ] (N ≥ 11 words)

**ABSTRACTION** Similarity between e.g. banana - orange = fruit [ ] train - bicycle [ ] watch - ruler [ ]

**DELAYED RECALL** Has to recall words WITH NO CUE [ ] FACE [ ] VELVET [ ] CHURCH [ ] DAISY [ ] RED [ ] Points for UNCLUED recall only

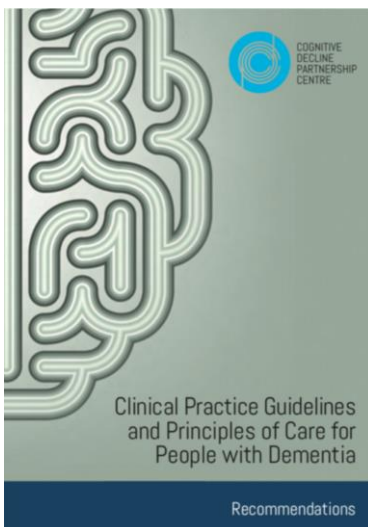
**Optional** Category cue [ ] Multiple choice cue [ ]

**ORIENTATION** [ ] Date [ ] Month [ ] Year [ ] Day [ ] Place [ ] City [ ]

© Z.Nasreddine MD [www.mocatest.org](http://www.mocatest.org) Normal ≥ 26 / 30 TOTAL Add 1 point if ≤ 12 yr edu

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## Management of early Alzheimer's disease Clinical Practice Guidelines (2016)



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<https://cdpc.sydney.edu.au/research/clinical-guidelines-for-dementia>

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## Clinical Practice Guidelines: Early identification of dementia

### Early identification

- 22 CBR General population screening for dementia should not be undertaken.
- 23 PP Concerns or symptoms should be explored when first raised, noted or reported by the person, carer(s) or family and should not be dismissed as 'part of ageing'.
- 24 CBR Medical practitioners working with older people should be alert to cognitive decline, especially in those aged 75 years and older.

### Specialist assessment services

- 25 EBR  
Low People with a possible diagnosis of dementia should be offered referral to memory assessment specialists or services for a comprehensive assessment.



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## Clinical Practice Guidelines Examples of recommendations: Care

- 67 EBR  
Low People with dementia living in the community should be offered occupational therapy interventions which should include: environmental assessment and modification to aid independent functioning; prescription of assistive technology; and tailored intervention to promote independence in activities of daily living which may involve problem solving, task simplification and education and skills training for their carer(s) and family.
- 68 EBR  
Low People with dementia should be strongly encouraged to exercise. Assessment and advice from a physiotherapist or exercise physiologist may be indicated.
- 103 PP Consideration should be given to involving the person with dementia, as well as their carer(s) and family, in support programs.
- 104 EBR  
Low Health and aged care professionals should provide carers and families with information regarding how to join a mutual support group. Individual preferences for group composition may vary and groups of the preferred composition should be available.

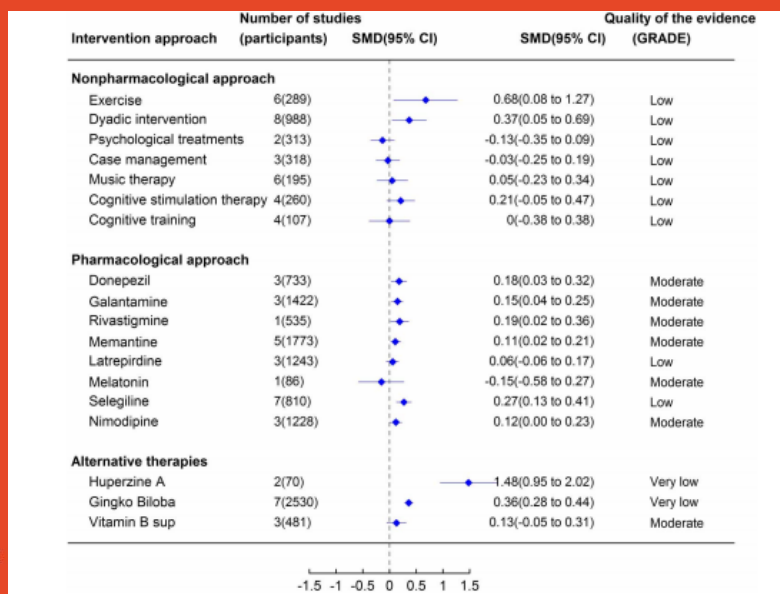
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## Importance of allied health involvement

- Occupational therapists
  - the COPE program which assists older people with dementia to stay at home longer
  - Home assessment for safety and falls assessment, and for aids
  - Can be funded through CHSP and Home Care Packages
- Physiotherapists and exercise physiologists
  - For strength and balance training for both dementia prevention, and to slow functional decline
  - For falls prevention
  - For frailty prevention
  - Can be funded through CHSP and Home Care Packages
- Psychologists
  - For assistance with cognitive assessments
  - For counselling and support
- Speech pathologists
  - For speech and swallowing issues (particularly FTLD)
- Social workers
  - For counselling and assistance with finance or placement issues

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## Effect of treatments on functional decline in dementia



The effect of different treatment approaches on activities of daily living function in people with dementia.

Laver 2016

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## Clinical Practice Guidelines Treatment

69 EBR  
Low Any one of the three acetylcholinesterase inhibitors (donepezil, galantamine or rivastigmine) are recommended as options for managing the symptoms of mild to moderately severe Alzheimer's disease. Any one of the three acetylcholinesterase inhibitors could be considered for managing the symptoms of severe Alzheimer's disease.

72 EBR  
Low Any one of the three acetylcholinesterase inhibitors (donepezil, galantamine or rivastigmine) could be considered for managing the symptoms of Dementia with Lewy Bodies, Parkinson's Disease dementia, vascular dementia or mixed dementia.<sup>3</sup>

75 EBR  
Low Acetylcholinesterase inhibitors should not be prescribed for people with mild cognitive impairment.

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### Use of cholinesterase inhibitors and mortality

- Systematic review and meta-analysis of 79,000 patients from multiple countries on cholinesterase inhibitors for Alzheimer's disease and other dementias
- At least 6 months exposure
- ChEI use resulted in lowering of all cause mortality by 23% (Haz Ratio 0.77, CI 0.74-0.80)
- **Conclusion:**

“There is moderate-quality to high-quality evidence of a consistent association between longterm treatment with ChEIs and a reduction in all-cause mortality in patients with dementia.”

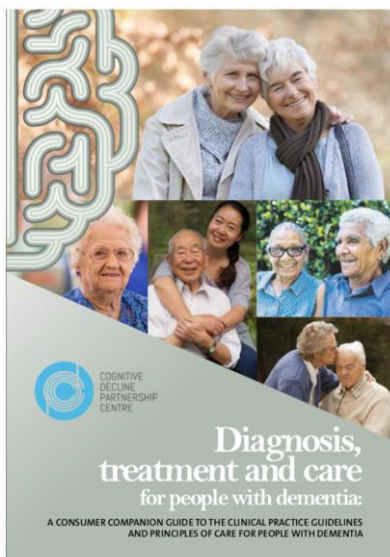
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## Useful resources for people with dementia and their families



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## Clinical Practice Guidelines: Information for Consumers: The Consumer Companion Guide



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<https://cdpc.sydney.edu.au/research/clinical-guidelines-for-dementia/>

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**Dementia Australia**

# The Dementia Guide

For people living with dementia, their families and carers.

[dementia.org.au/the-dementia-guide](https://dementia.org.au/the-dementia-guide)

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## The Dementia Guide

### Section 1

# About dementia

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- How does dementia progress?.....22

[dementia.org.au/the-dementia-guide](https://dementia.org.au/the-dementia-guide)

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# The Dementia Guide

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### Planning for the future

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Advance care planning ..... 62

[dementia.org.au/the-dementia-guide](http://dementia.org.au/the-dementia-guide)

# The future in dementia diagnosis and drugs



## Earlier diagnosis of Alzheimer's disease

- The presence of amyloid and phosphorylated tau in the brain is consistent with Alzheimer's disease
- Blood biomarkers for p-Tau and amyloid are in clinical studies including in general practice in Australia
- CSF biomarkers for amyloid and tau are available but expensive and hard to access
- Neuroimaging can be useful eg MRI volumetric studies showing specific areas of atrophy
- PET scanning for presence of amyloid can also be useful but is mainly for drug trial inclusion due to cost and availability
- PET scanning for p-Tau shows potential and may be necessary before use of new drugs
- **It is important to note that patients can have amyloid in their brains on scanning but no cognitive symptoms, and may never develop dementia in their lifetime**

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## New disease modifying drugs on the horizon

- Lecanemab – monoclonal antibody against amyloid, one of a number in recent studies (currently awaiting TGA approval)
  - Showed definite clearance of amyloid from brain
  - Showed minimal cognitive improvement (but statistically significant change) compared to placebo (0.47 on Clinical Dementia Rating Scale where 1 to 2 points is considered clinically significant) and slowed progression by around 5 months
  - IV fortnightly infusions, regular cerebral MRIs as Amyloid Related Imaging Abnormalities (ARIA) are seen in around 25%
- Anavex 2/73 – sigma 1 receptor activator promoting neuroplasticity
  - Showed minimal but statistically significant improvement (0.42 on Clinical Dementia Rating Scale)
  - Oral administration, dizziness on starting was main side effect

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# The future in dementia care



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Australian Government  
Department of Health and Aged Care

## Summary of National Dementia Action Plan 2024–2034

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## National Dementia Action Plan 2024 - 2034

1. Promote equity and human rights
2. reducing stigma and discrimination for people living with dementia and their carers and families
3. Empower individuals and communities to **minimise risk** where they can, and delay onset and progression
4. **more timely diagnosis of dementia**, including more consistent assessment processes and more empathetic delivery of a diagnosis
5. better coordinated **post-diagnostic care**, including support to navigate the Health and Aged Care systems
6. increased understanding and capacity of health and aged care workers caring for people living with dementia
7. improved support for carers of people living with dementia
8. better **dementia data** and support to translate dementia research into practice

## NATIONAL SUPPORT PROGRAMS



### NATIONAL DEMENTIA AUSTRALIA SUPPORT PROGRAM

- ◆ [National Dementia Helpline](#): 1800 100500 (24/7, 365 days), [helpline@dementia.org.au](mailto:helpline@dementia.org.au)
- ◆ [Dementia Australia](#): Counselling, Education, Webinars, Online Library service
- ◆ [GP Support Pack](#), including services directory and referral pad
- ◆ Some of these services require payment which may be covered by CHSP and HCP

### BEHAVIOUR SUPPORTS THROUGH DEMENTIA SUPPORT AUSTRALIA (all free)

- ◆ [Dementia Behaviour Management Advisory Service](#) 1800 699 799
- ◆ [Severe Behaviour Response Team](#)
- ◆ [GP Advice Service](#) (currently email, soon to be telephone service)

**Thank you**

**Questions**

