



Dementia Prevention in Middle-Aged Adults - Exploring the Role for Primary Care

Honorary Professor Dimity Pond
Discipline of General Practice
University of Newcastle



Why focus on dementia prevention?

- ▶ Around 50 million people live with dementia, worldwide
- ▶ Projected to increase to 152 million by 2050
- ▶ Dementia affects individuals, their families, and the economy, with global costs estimated at about US\$1 trillion

Livingston et al. Dementia prevention, intervention and care: 2020 report of the Lancet Commission. *Lancet* 2020; 396: 413–46

- ▶ IN Australia between 386,000 and 472,00 thousand people live with dementia in 2021. Will more than double by 2058
- ▶ Second leading cause of death in Australia in 2019 (leading cause of death in women)
- ▶ Cost \$3billion in health and aged care in 2018-19

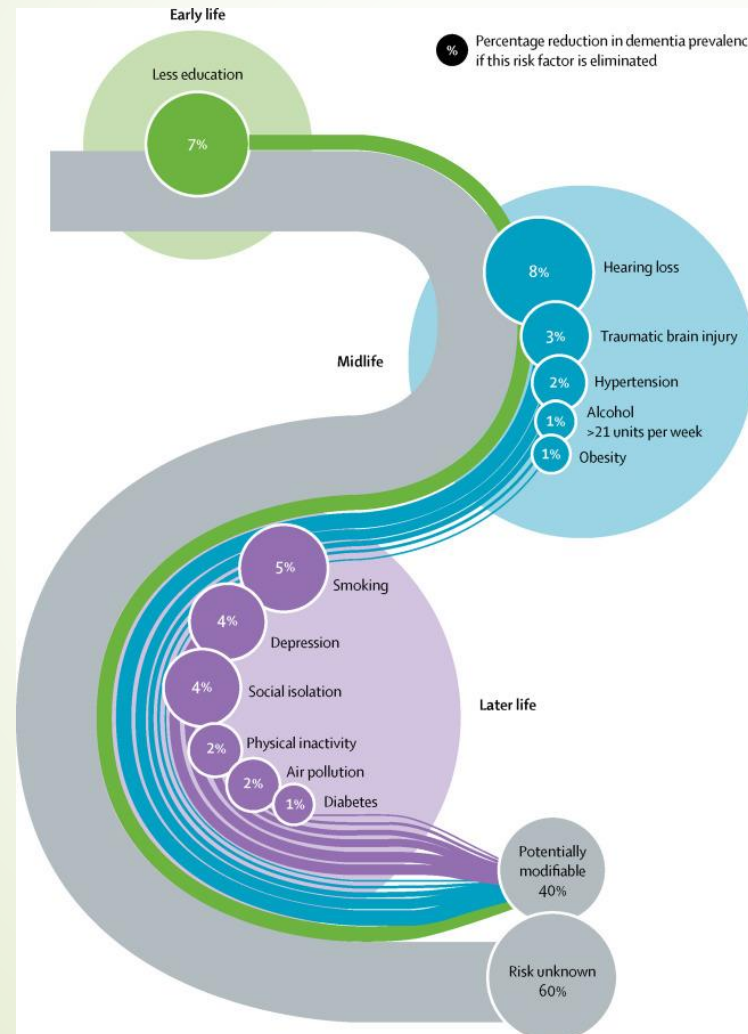
AIHW 2021 <https://www.aihw.gov.au/reports-data/health-conditions-disability-deaths/dementia/overview>



Jan Brown

- ▶ Jan Brown, aged 45, comes to see you for a “check up”. She has not seen you before as she has recently moved into the area.
- ▶ She is particularly concerned about her risk of dementia, as her mother had dementia and she remembers this as particularly traumatic for the all the family.
- ▶ She has heard that there may be something she can do to prevent dementia if she starts working on her health in middle age. As she is now 45 years old, she guesses this is the time to do this.
- ▶ How would you advise her?

LANCET Commission: 12 Modifiable Risk Factors (Livingston et al, see slide 2)



Relative risk for dementia

Early life (<45 years)

- Less education 1.6

Midlife (45-65 years)

- Hearing loss 1.9
- Traumatic Brain Injury 1.8
- Hypertension 1.6
- Alcohol >21 units per week 1.2
- Obesity 1.6

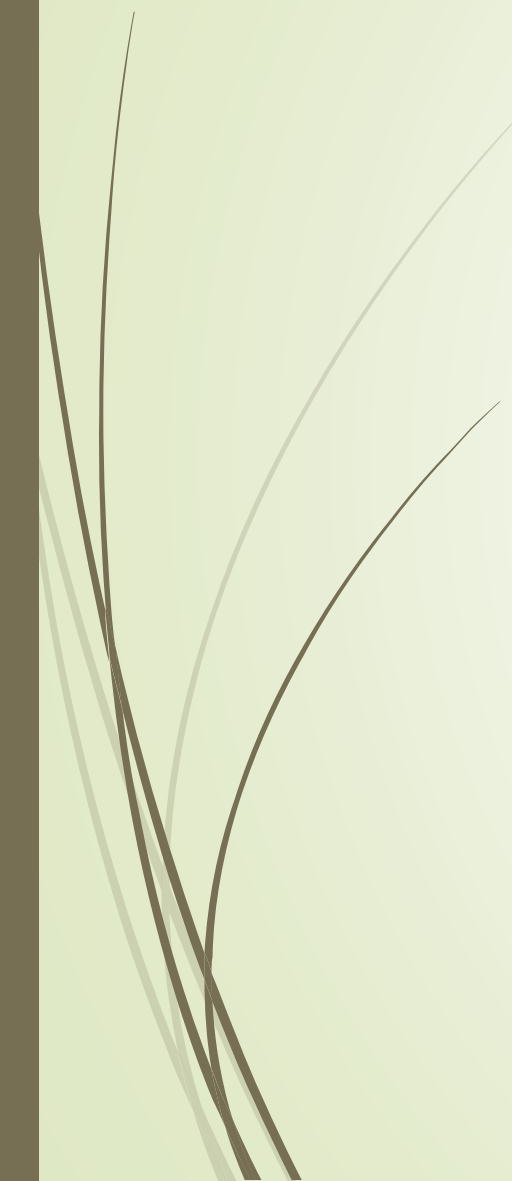
Later life (age>65years)


- Physical inactivity 1.4
- Diabetes 1.5
- Depression 1.9
- Smoking 1.6
- Social isolation 1.6
- Air pollution 1.1



Why look at risk factors?

From: Kaarin J. Anstey, Ruth Peters 2019. Dementia Prevention. NHMRC Partnership Centre for Dealing with Cognitive and Related Functional Decline in Older People
<https://cdpc.sydney.edu.au/research/care-service-pathways>

- Risk factors for dementia may be divided into non-modifiable eg genetics and modifiable eg obesity, low physical exercise.
 - Many of the risk factors for dementia are also risk factors for other diseases eg heart disease, diabetes, so addressing these provide prevention for a range of chronic disease
 - Many risk factors for dementia are modifiable by lifestyle change, medication and avoidance of environmental hazards
 - Middle-age appears to be a critical period when risk factors emerge that increase late-life risk of dementia.
- 



MBS item **701-707** for a person aged 45 to 49 years (inclusive) with a chronic disease risk factor (from MBSOnline)

- ▶ information collection, including taking a patient history and undertaking examinations and investigations as clinically required;
- ▶ making an overall assessment of the patient's health, including the patient's readiness to make lifestyle changes;
- ▶ initiating interventions and referrals as clinically indicated;
- ▶ providing advice and information; including strategies to achieve lifestyle and behaviour changes;
- ▶ keeping a record of the health assessment, and offering the patient a written report about the health assessment, with recommendations about matters covered by the health assessment; and
- ▶ offering the patient's carer (if any, and if the medical practitioner considers it appropriate and the patient agrees) a copy of the report or extracts of the report relevant to the carer.

Information collection - cardiovascular risk factors present in midlife

- ▶ Hypertension (Lancet – systolic >140) associated with 1.6 times rate of dementia in later life. Medication reduces this. No consistent difference by drug class.
- ▶ High cholesterol, atrial fibrillation, stroke – all increase risk. Use standard treatments
- ▶ Diabetes – increases risk. Unclear whether intensive control or any particular medication reduces risk. Treat according to guidelines





Information collection – lifestyle factors in mid life

- ▶ Alcohol \geq 21 units per week increases risk. Reduce alcohol consumption to less than this.
- ▶ Smoking at any age 1.6 times increased risk. Cease smoking $>$ 4years reduces risk.
- ▶ Obesity (Lancet BMI $>$ 30) associated with 1.3 times rate of dementia in later life. Weight loss of 2kg or more improved attention and memory. Long term data lacking
- ▶ Physical inactivity (Lancet – 1.4 times the risk of dementia in later life). Varying amounts of exercise recommended. See Chong et al. Physical activity for older Australians with mild cognitive impairment or subjective cognitive decline. [Journal of Science and Medicine in Sport](#). 23(10)2020: 913-920. Suggest 150mins mod intensity /week plus progressive resistance training 2 days/week plus balance training, all individually tailored.
- ▶ Traumatic brain injury 1.8 times increased risk.

Other risk factors

- Diet
- Depression
- Social Isolation
- Lack of cognitive stimulation

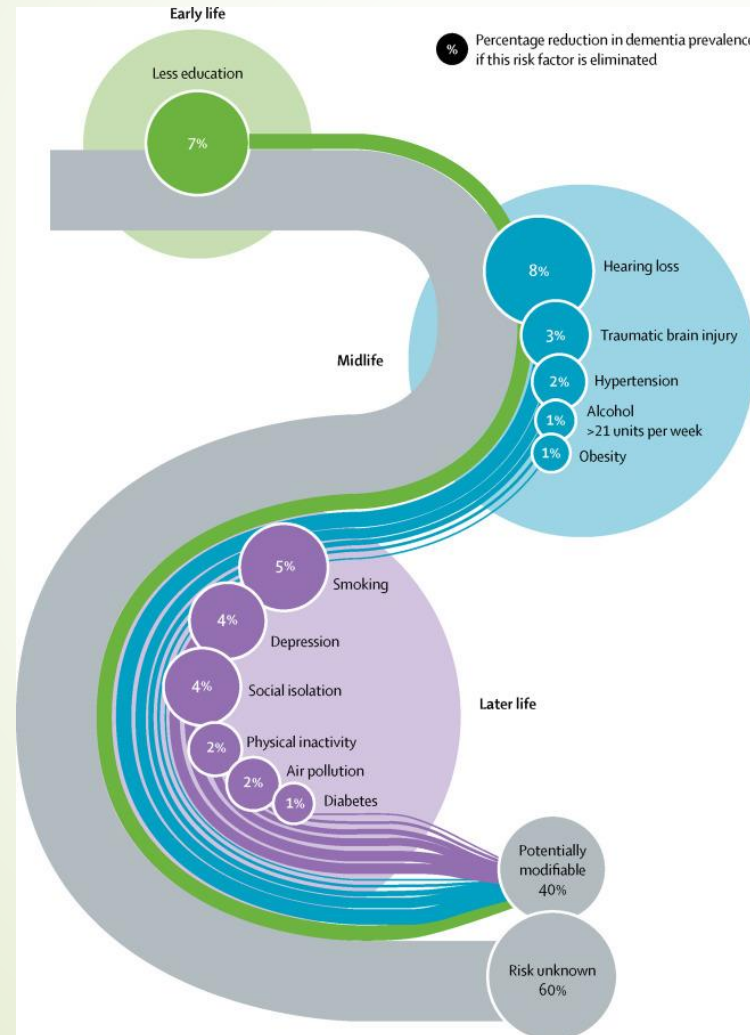


Other uses for risk factors

- Identify these for preventive activities (as above and in the HAPMIND study)
- Identify these to target cognitive function tests in later life
- Identify these to construct a dementia risk score for intensive follow up.



LANCET Commission: 12 Modifiable Risk Factors



Relative risk for dementia

Early life (<45 years)

- Less education 1.6

Midlife (45-65 years)

- Hearing loss 1.9
- Traumatic Brain Injury 1.8
- Hypertension 1.6
- Alcohol >21 units per week 1.2
- Obesity 1.6

Later life (age>65years)

- Physical inactivity 1.4
- Diabetes 1.5
- Depression 1.9
- Smoking 1.6
- Social isolation 1.6
- Air pollution 1.1



Summary



- There are multiple risk factors for dementia throughout life
- As a GP we can intervene at any stage and mid life is an ideal opportunity
- Ideally dementia prevention should include all levels of society – from all types of health care workers, to the community more broadly and policy makers
- It would be possible to reduce dementia prevalence by up to 40% using prevention techniques