



# How to prevent dementia without really trying

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# Question 1

Dementia is a normal part of ageing

- 1. Yes
- 2. No
- 3. Maybe
- 4 Don't know



# 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*



## Question 2

The increasing numbers of people with dementia worldwide mainly indicate:

- ▶ 1. That preventive activities are not effective
  - ▶ 2. That our environment is becoming more likely to cause dementia worldwide
  - ▶ 3. That our populations are ageing and are therefore more likely to have dementia
  - ▶ 4. None of the above
- 



Question 3: If all known risk factors for dementia were eliminated, approximately what percentage reduction in dementia prevalence could we achieve:

- 1. 10-20%
- 2. 20-30%
- 3. 40-50%
- 4. 80-90%



# Mr X



- ▶ Mr X, aged 45, comes to see you for a “check up”. He has not seen you before as she has recently moved into the area.
- ▶ He tells you that he has noticed some problems with his memory lately (subjective memory complaints)
- ▶ He is particularly concerned about his risk of dementia, as his father had dementia and he remembers this as particularly traumatic for the all the family.
- ▶ He has heard that there may be something he can do to prevent dementia if he starts working on his health in middle age. As he is now 45 years old, he guesses this is the time to do this.
- ▶ How would you advise him?



## Question 4. Preventive activities for dementia should be aimed at which age group?

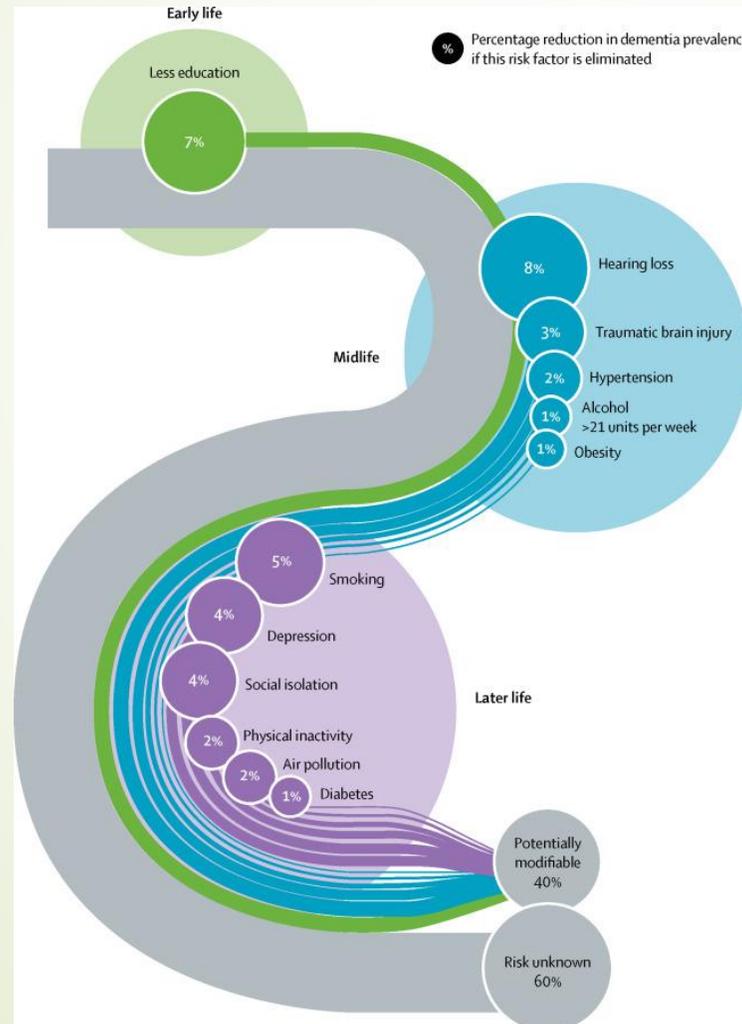
- ▶ 1. Young people, so he has missed the boat
- ▶ 2. Middle aged people so he is in the right age group to look at prevention
- ▶ 3. Older people who are already showing signs of dementia
- ▶ 4. All of the above



Question 5: Mr X already has memory problems and a strong family history. Is it too late to prevent dementia?

- 1. True
- 2. No, but only medication may help
- 3. No, in this man lifestyle modification may help
- 4. Medication if indicated, lifestyle modification and a variety of other interventions such as avoiding pollution on high pollution days may help.

# 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



# What can primary care do for dementia prevention?

- ▶ Risk factors for dementia may be divided into non-modifiable eg genetics and modifiable eg low physical exercise. We in primary care can look at modifiable risk factors
- ▶ 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.

*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>*



# Approach to Mr X

- History and measurement
  - **Cardiovascular risk factors** – Hypertension, high cholesterol, diabetes, atrial fibrillation
  - **Lifestyle factors** – obesity, low physical activity, smoking, alcohol, diet
  - **Mental health** – depression, social isolation
  - **Other physical factors** – hearing impairment, head injury
  - **Environment** – air pollution, (education)

# History and examination/measurement - cardiovascular risk factors

- ▶ 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





# History and examination – lifestyle factors in mid life

- ▶ 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
- ▶ Low Physical activity (Lancet – 1.4 times the risk of dementia in later life). Varying amounts of exercise recommended. For subjective memory complaints, suggest 150mins mod intensity /week plus progressive resistance training 2 days/week plus balance training, all individually tailored.(Chong see below)

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

# Lifestyle factors (continued)

- ▶ Smoking at any age 1.6 times increased risk. Cease smoking > 4 years reduces risk.
- ▶ Alcohol  $\geq$  21 units per week increases risk. Reduce alcohol consumption to less than this.
- ▶ Diet – Mediterranean diet, MIND diet.



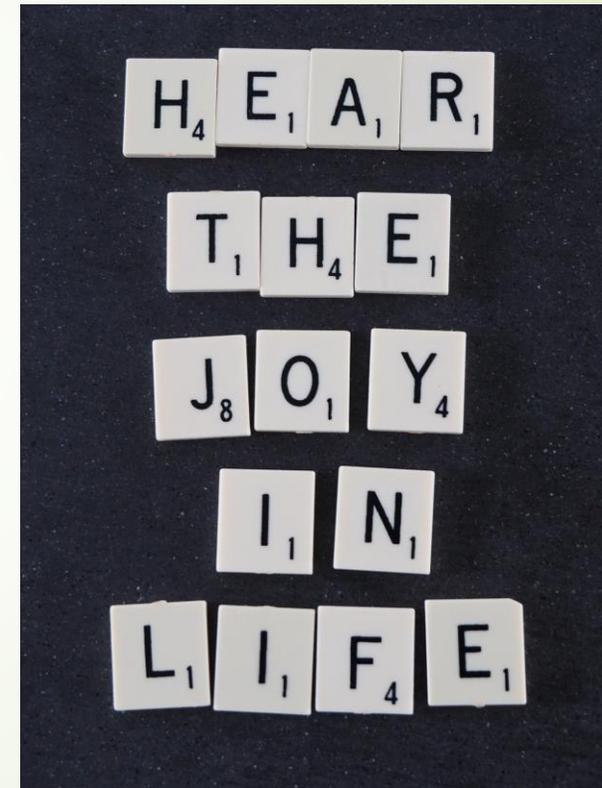
# Mental health

- Depression increases risk. Treat as per guidelines
- Social Isolation. Increase in social activities. May be known as social prescribing
- Cognitive engagement



# Other physical factors

- ▶ Hearing loss 1.9 times greater risk. This risk is lessened if hearing impairment is treated
- ▶ Traumatic brain injury 1.8 times increased risk. Take measures to avoid this when possible.
- ▶ Photo by [Mark Paton](#) on [Unsplash](#)



# Environmental factors

- ▶ Air pollution- avoid going outside  
On high pollution days
- ▶ Education – more years of education are protective





# Achieving optimal dementia prevention will involve:

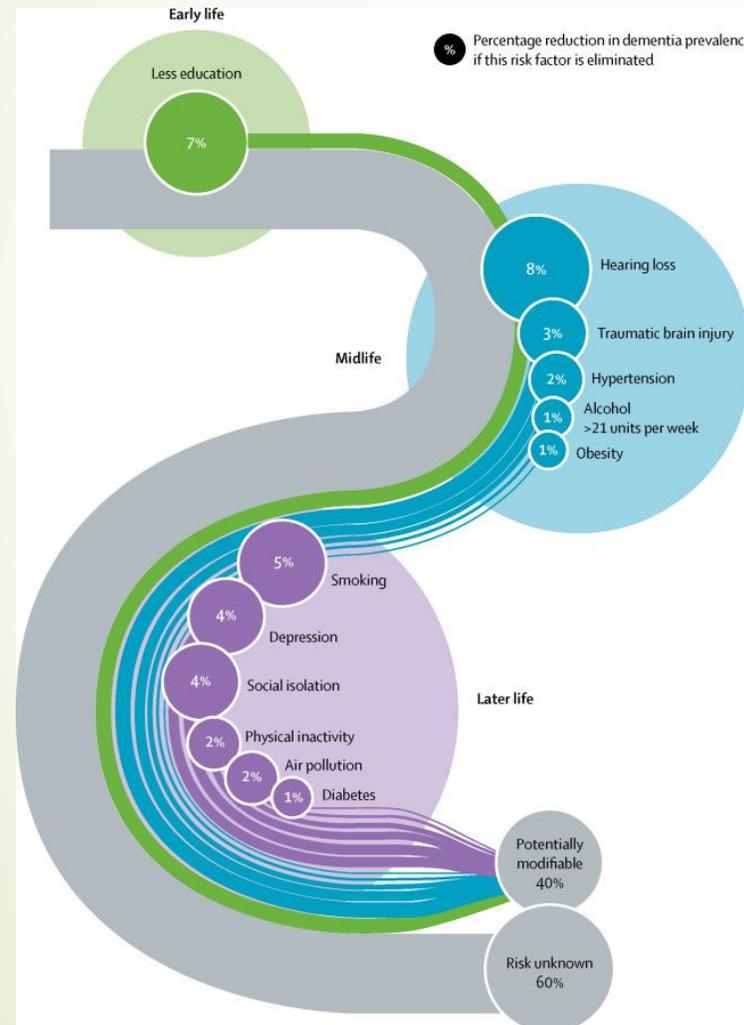
- 1. The medical professional and patient only
  - 2. The medical profession, nursing and allied health professionals only
  - 3. Both health and social care (eg community support) groups
  - 4. A broad range of health, social care, community and government policy initiatives eg around education and pollution.
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# Other uses for risk factors

- 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



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# 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