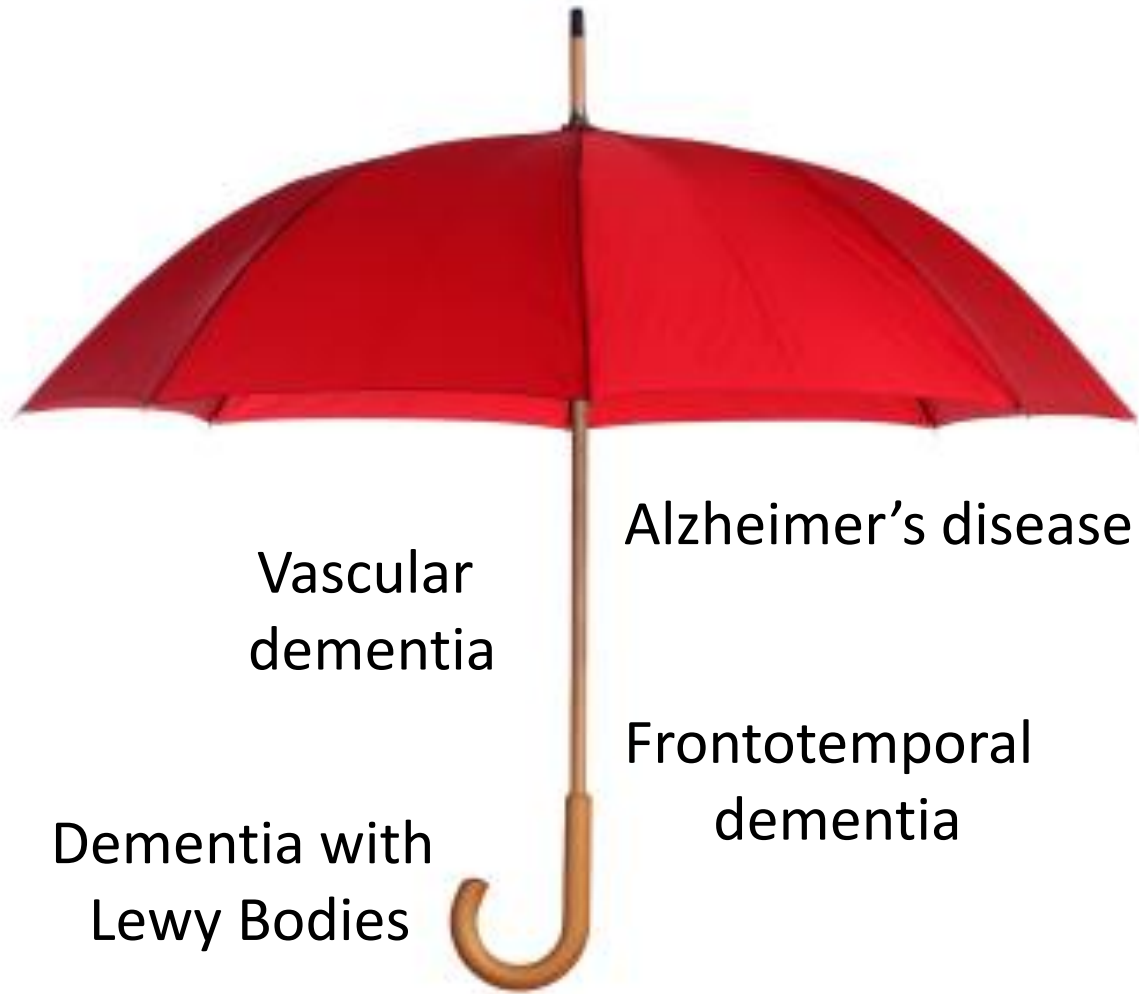


Hearing loss and the risk for dementia

Prof. Michael Hornberger

Dementia - background

What is dementia?



- Dementia is third most common disease in ageing, after heart disease and stroke
- Dementia is an **'umbrella' term for the impaired ability to remember, think, or make decisions that interferes with doing everyday activities**
- Several different diseases are under this 'umbrella'
- Alzheimer's disease is the most common type of dementia (~60-70%)
- Though dementia mostly affects older adults, it is not a part of normal aging

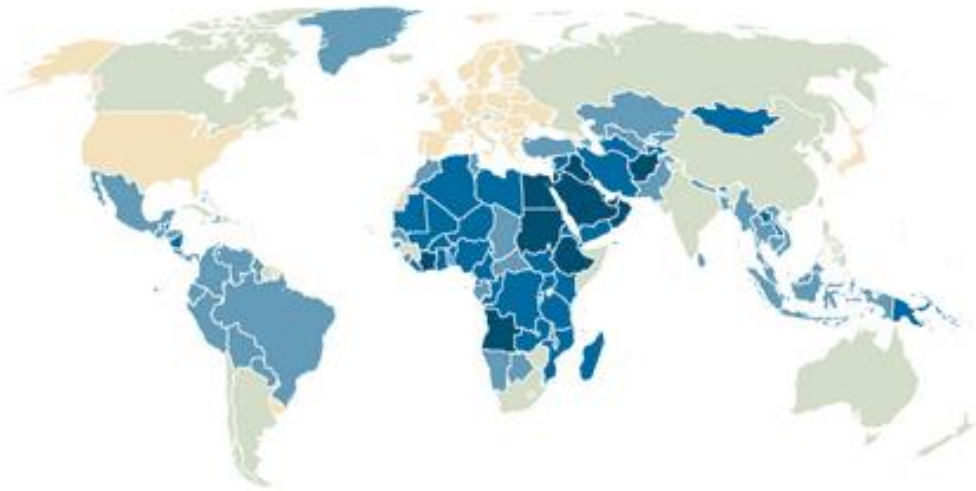
Dementia –international

50m
people are living with dementia globally.

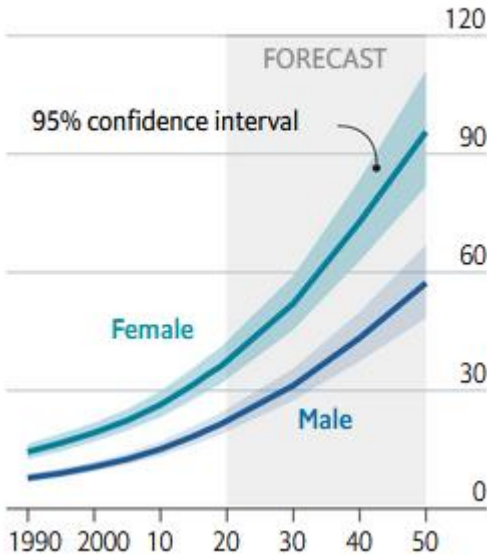


Globally, the numbers of people living with dementia will increase from 50m in 2018 to 152m in 2050, a 204% increase.

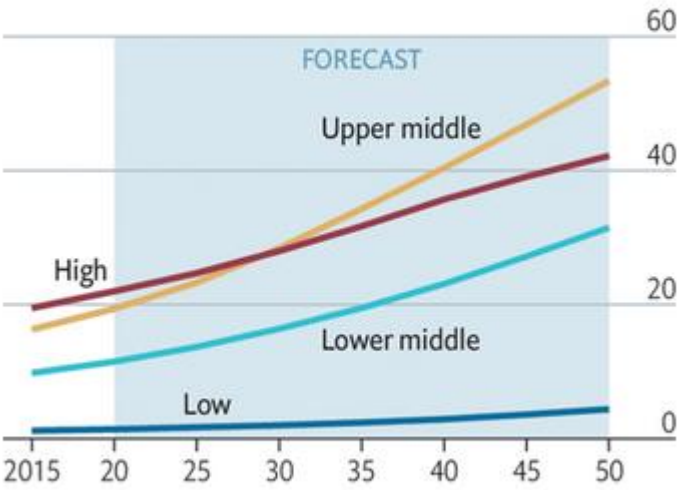
Dementia prevalence, 2019-50 forecast, % increase



Global dementia prevalence, m

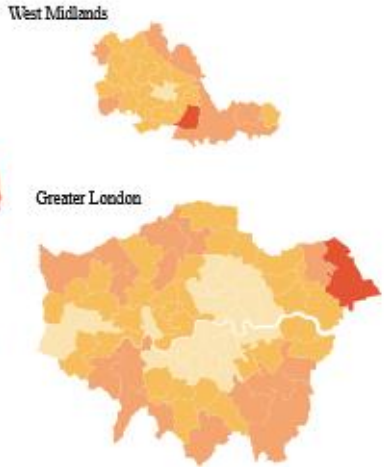
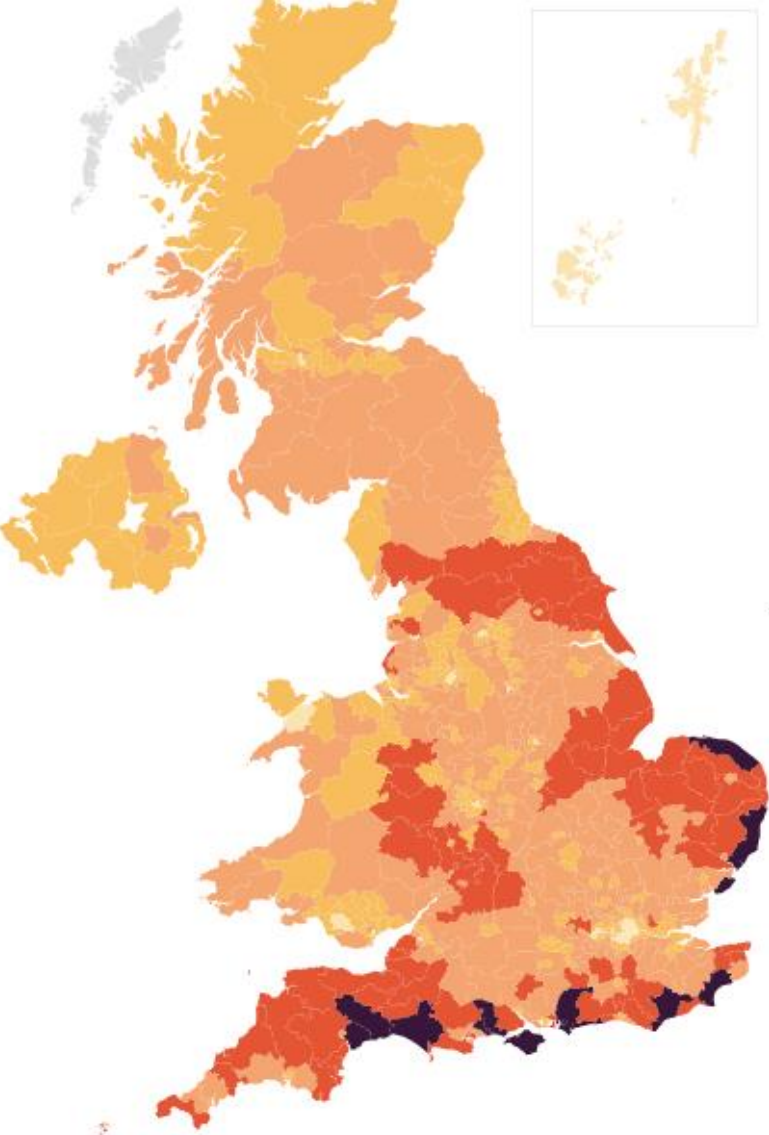


Global dementia prevalence, m
Countries by income group

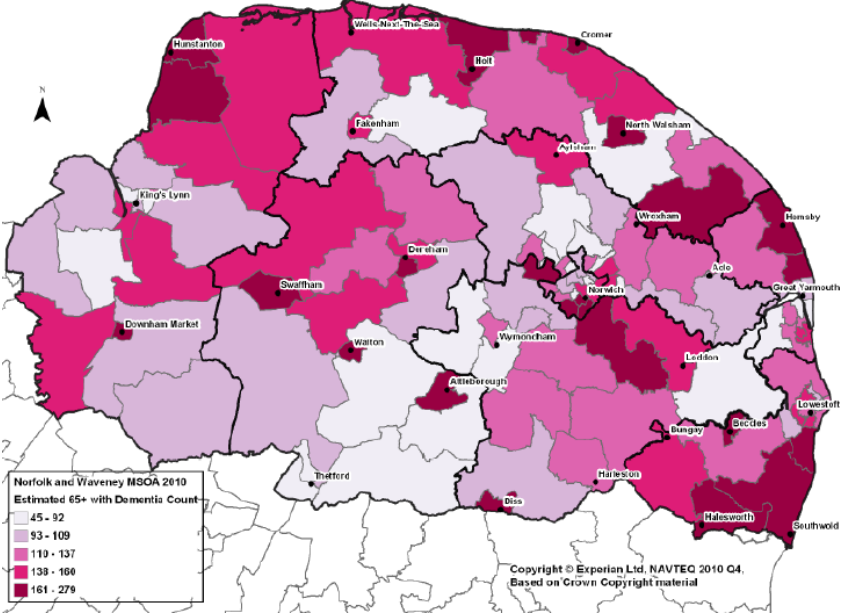


Source: Alzheimer's Research UK
The Economist

Dementia – national/regional



944,000
 people are estimated to be living with dementia in the UK.



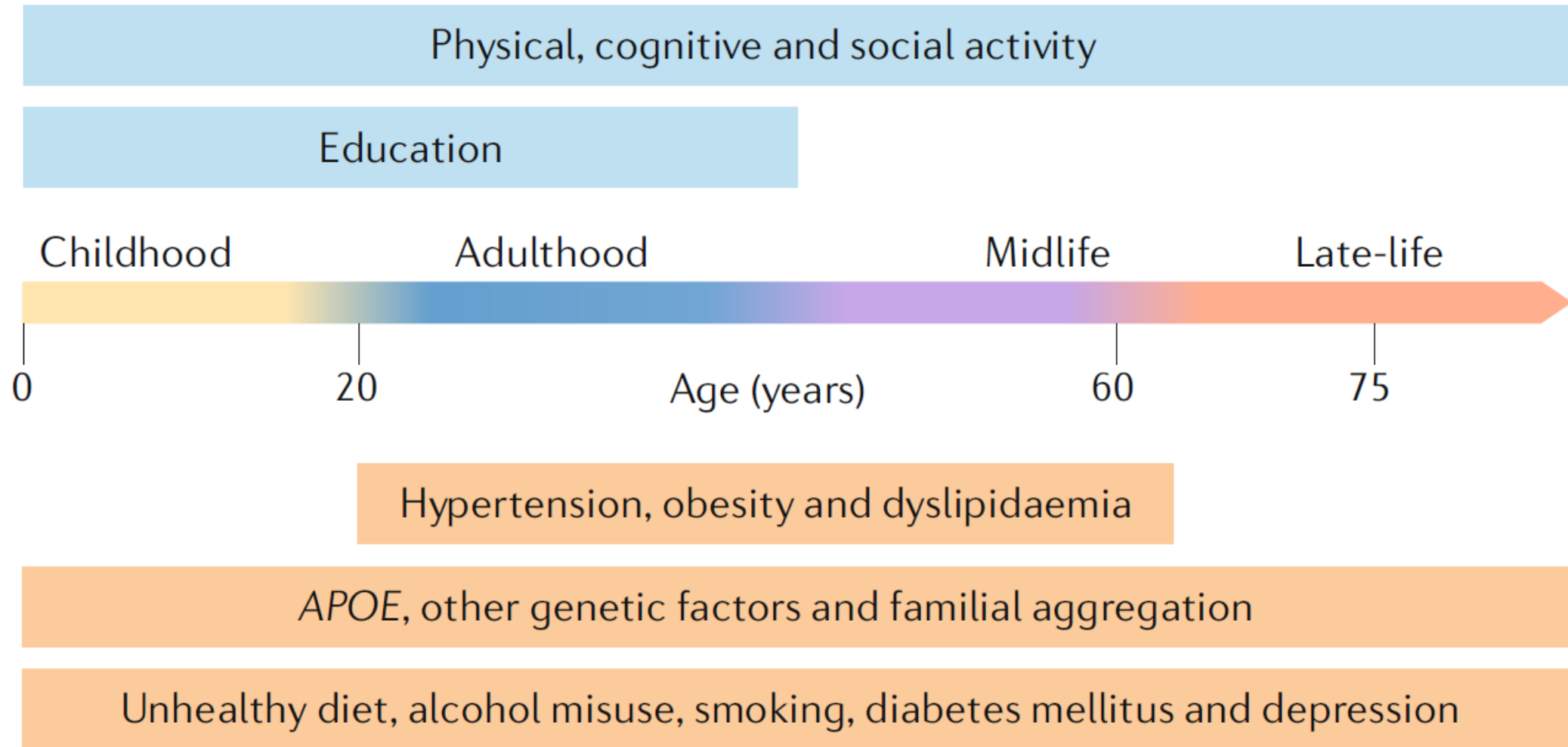
Norfolk and Waveney MSOA 2010
 Estimated 65+ with Dementia Count

- 45 - 92
- 93 - 109
- 110 - 137
- 138 - 166
- 161 - 279

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Dementia – risk factors

Lifecourse factors affecting our dementia risk



Top tips to reduce the risk for dementia

1



Avoid smoking

It's not easy to give up smoking, but thinking about your brain could be a good incentive. Smoking is already linked to a number of health conditions – and now researchers have found it increases your risk of developing diseases like Alzheimer's and vascular dementia. Whatever age you stop smoking, it helps improve your health – so it's never too late.

Getting expert help now can greatly improve your chance of giving up smoking successfully, and getting you closer to a healthy brain.

Quick tip: get free help to give up smoking: visit [nhs.uk/smokefree](https://www.nhs.uk/smokefree), call 0300 123 1044 or talk to your GP.

2

Keep your cholesterol and blood pressure in check

Keeping cholesterol levels and blood pressure under control can help your overall health and reduce the risk of dementia. There are several things you can do to lower your cholesterol, such as reducing red meat, cheese and biscuits in your diet and increasing your intake of oily fish, fruit and vegetables.

The NHS can help you monitor your blood pressure, cholesterol and other risk factors. If you're aged 40-75 and do not already have a cardiovascular disease, you should receive a letter from your GP surgery or local council inviting you for a free NHS Health Check every five years.



Top tips to reduce the risk for dementia

3

Be physically active

You don't have to train for a marathon to keep your brain healthy. Doing a physical activity you enjoy means you're more likely to stick with it, so your body and brain will feel the benefit for longer.

You can build up strength with anything from lifting weights to digging up weeds, improve balance through yoga or dancing, and get your blood pumping by cycling or climbing stairs for a few minutes every day.

Quick tip: aim to do 150 minutes of exercise a week – that's 30 minutes a day for five days.



4

Stay connected

In recent years, scientists from several different fields have explored the impact our social connections and relationships have on our health. For our brain health, social contact is crucial.

Evidence increasingly suggests that face-to-face interactions can slow symptoms of dementia such as deteriorating memory, as listening and replying to people requires us to think and respond quickly.

Quick tip: join hobby groups, meet friends and keep up those social interactions wherever possible.



Top tips to reduce the risk for dementia

5



Eat well and aim for balance

Eating a well-balanced diet is one of the best ways to reduce your risk of several health conditions in later life, including dementia. A balanced diet could help protect you against dementia by helping to reduce your risk of cardiovascular disease.

Reducing fat in our diet is important, but it doesn't mean cutting it out altogether. Some fats, such as those found in oily fish, nuts, seeds and avocados can be hugely beneficial. A good balance of fruit, vegetables, pulses, fish and high fibre complex carbs every week can go a long way to keeping your body healthy and getting vital nutrients.

You'll find more advice on healthy eating at alzheimersresearchuk.org/dementia-information/reducing-the-risk/#eating

Quick tip: speak to your doctor or dietitian about healthy eating.



6



Keep your brain active and exercised

Staying mentally and socially active is linked to a lower risk of problems with memory and thinking. Keeping your brain active can mean anything from spending more time in education to doing crossword puzzles, brain teasers or playing an instrument.

Find more ways to keep your brain healthy at alzheimersresearchuk.org/reducing-the-risk

Together these lifestyle factors can reduce our risk for dementia by up to 40%!

7



Keep an eye on drinking

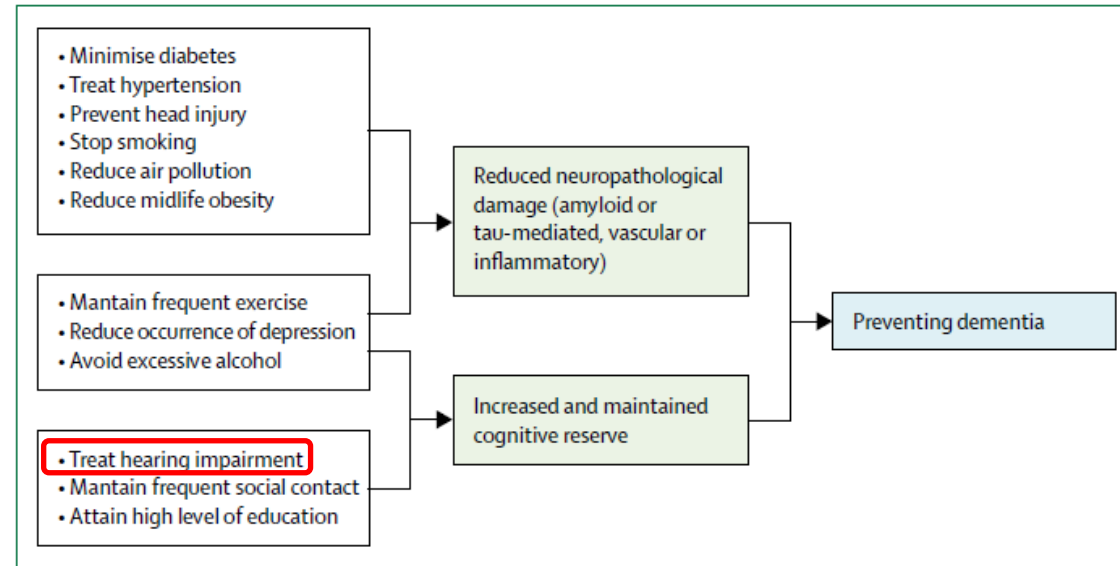
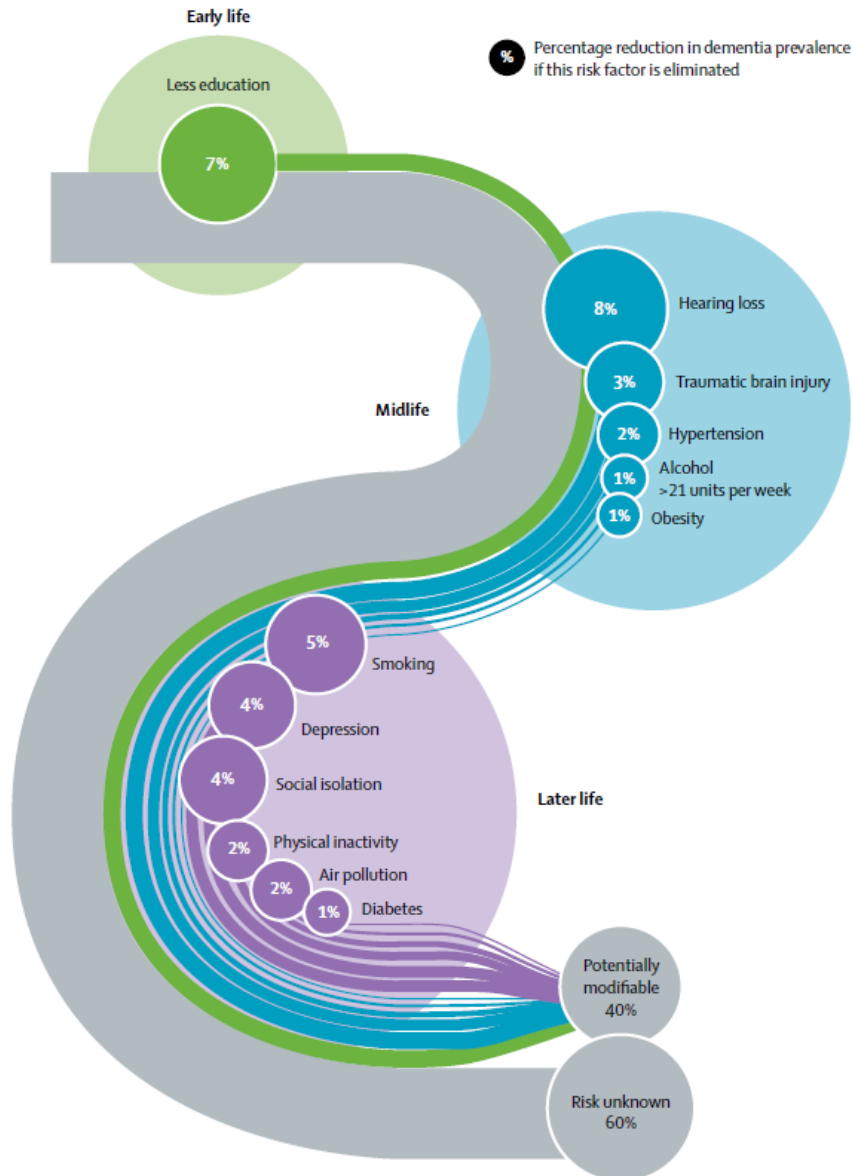
It's well known that drinking impairs thinking and judgement. This is because of the complex impact alcohol has on our cognition. Now research has found a link between regularly drinking too much and an increased risk of diseases that lead to dementia. In fact, long-term heavy drinking is known to cause Wernicke-Korsakoff Syndrome, which can lead to permanent memory loss.

For your overall health, the Chief Medical Officer's low-risk guidelines recommend regularly drinking no more than 14 units a week. A good way to cut back on drinking is to have at least three drink-free days in a row each week.

Quick tip: 14 units = 7 pints of beer or cider = 9 small glasses of wine.

Hearing loss – dementia risk

Hearing loss – dementia risk



Dementia & Hearing Loss



Mild hearing loss: **2 times**
more likely to develop dementia

Moderate hearing loss: **3 times**
more likely to develop dementia

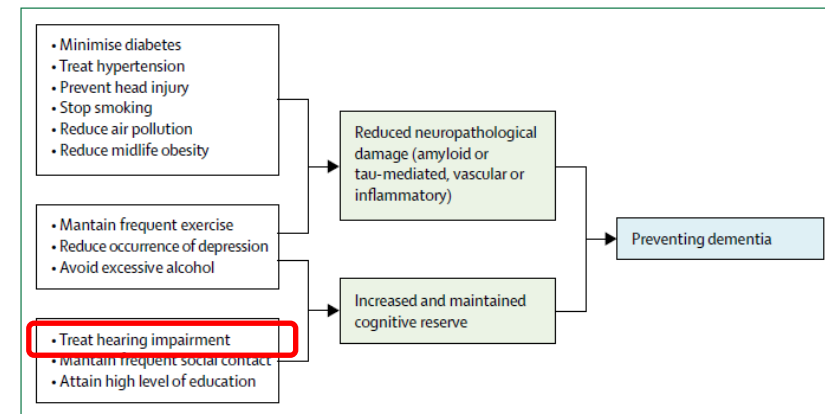
Severe hearing loss: **5 times**
more likely to develop dementia

Hearing loss - background

- Hearing loss (HL) affects over 1.5 billion people globally
- More than 40% of people over 50 years old
- In the UK an estimated 12 million adults have HL – one in five
- This number is set to rise to 14 million by 2035
 - Main reasons: increased noise exposure & ageing population
- HL is the 3rd leading cause of Years Lived with Disability, higher than diabetes and visual impairment
 - 1st for sensory disorders and for those over 70
- It affects every day functioning, communication, social interactions, independence and employment opportunities among others

Hearing aids - background

- Leading management strategy for the vast majority of patients with HL
- Suitable for those with mild and moderate HL
- Hearing Aids (HAs) are effective at restoring audibility and improving quality of life
- HA users still face significant challenges, such as listening in noisy environments and poor sound quality
- As a result, many adults, especially elderly, do not accustom to their HAs and do not use them
- Around 20% of HAs are not used at all



Hearing loss and dementia

- HL is a major risk factor for cognitive decline and potentially dementia in midlife (45-65 years old)
- It nearly doubles the risk for cognitive decline/dementia later in life
- Use of HAs has been associated with a decrease in hazards of cognitive decline
- We do not know if people with HL are aware of the future risk for cognitive decline and dementia and how HA use is critical for their future cognitive health
- We do not know if it is feasible to use cognitive testing in audiology clinics to diagnose dementia early in people with a HA

Hearing loss and dementia – HEARD study

- To answer these questions we conducted an **interview study** to explore the **views of HA users and audiologists** on:
 - The risk of cognitive decline
 - The potential benefit of using a HA
 - Embedding cognitive testing in audiology clinics
- Study conducted at the University of East Anglia in collaboration with *Hear for Norfolk* charity (Professor Michael Hornberger, Mrs Aliona Derrett)
- Research Capability Funding from Integrated Care Board Norfolk & Waveney

HEARD - interviews

- 4 **adults between 57-65** years old without severe sight loss **fitted with a HA**
- 2 **audiologists** with >15 years of experience
- 30-minute online individual **interviews** about cognitive health
 - **Patient interviews topics:** use of HA, risk of cognitive decline, expectations from cognitive assessment
 - **Clinician interviews topics:** cognitive screening as part of hearing assessment and fitting and how they could be incorporated
- All participants were asked to complete a set of **8 online cognitive tests** and provide feedback – next slide

Online cognitive testing

- NeurOn: Online cognitive assessment platform
- Tests assess a range of cognitive abilities including:
 - Memory
 - Attention
 - Ability to make decisions
 - Reaction time
- Examples of tests – following slides



Learning & Memory

Telephone

Guitar

Did you see this word?

x

✓

Guitar

+

←

Guitar

→

Where did you see it?

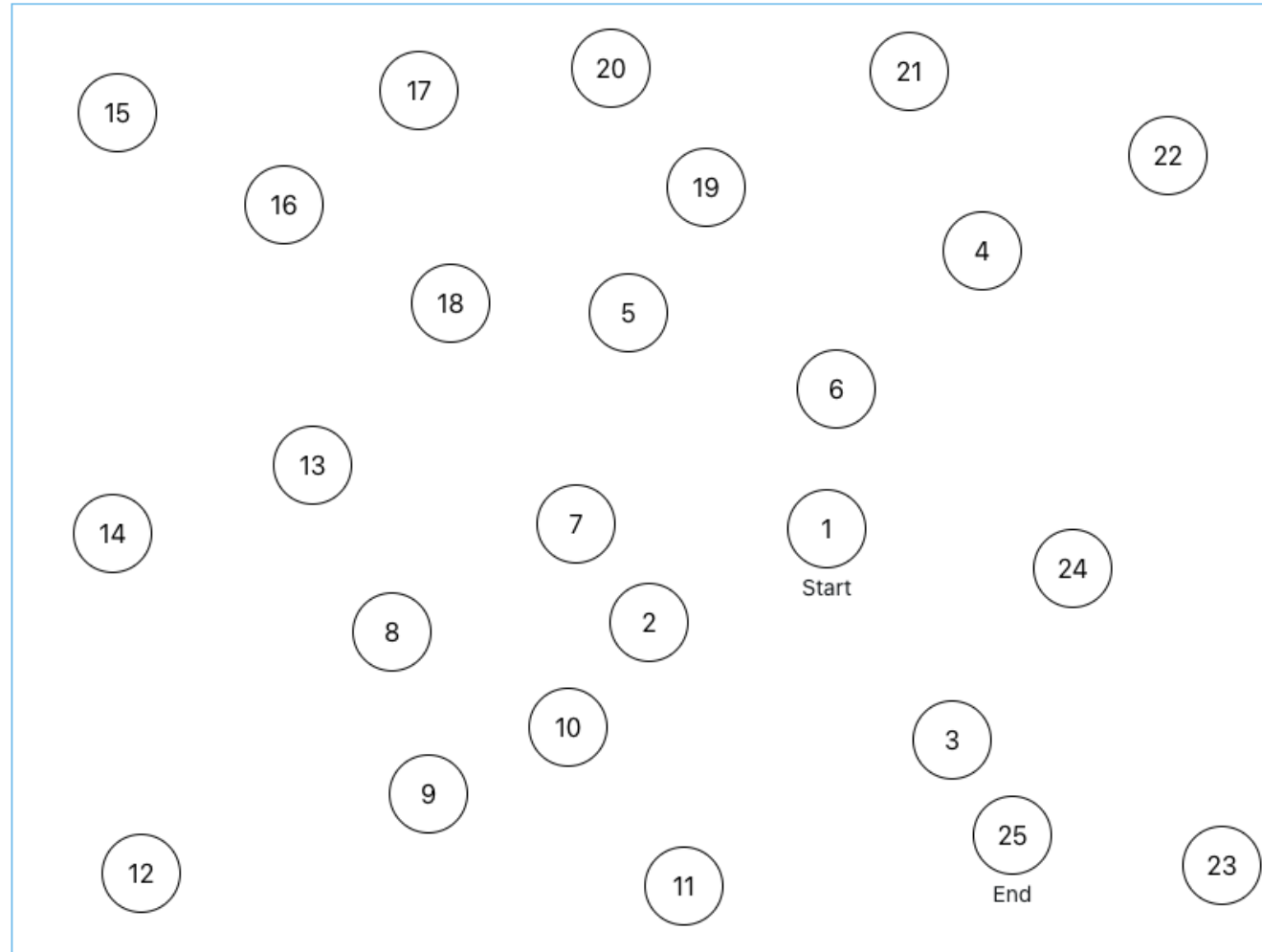
↓

Working memory

Click the numbers below as fast as you can to enter the sequence in reverse order

0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

Executive function (decision making)



Key findings - awareness

- Lack of awareness about the risk of cognitive decline among HA users
- Interest among HA users to be informed about the potential risk of cognitive decline and the potential benefit of using a HA
- Interest among audiologists to include cognition in their HA assessment and fitting appointments by discussing the risks of cognitive decline
- Patients and clinicians thought the risk of cognitive decline can be a strong motivator and can encourage people to use HAs

“That's a very strong motivator. I don't think all people always understand what cognitive decline is but everyone knows what dementia is. So yeah, I think when we mention it is very much a strong motivator for having a HA.”

“I think just the knowledge that if you if you need a HA and you use a HA then may well reduce your likelihood of dementia or other forms of sort of cognitive decline, I think that in itself is a very powerful message.”

Key findings – cognitive testing

- Patients and clinicians were very keen on cognitive assessment as part of their hearing assessment and fitting as long as the reason and expectations are clearly explained
- A practical barrier in adding cognition that was raised by audiologists was the lack of time during the hearing assessment visit
- Audiologists could use the results of cognitive testing to guide rehabilitation mostly by offering more counselling and support
- The NeurOn platform was generally easy to use for patients

Cognitive testing as self-monitoring tool

- HA users and audiologists agreed that cognitive tests could be used for self-monitoring

“Keeping an eye on it and not just accepting that as being normal... And I think if they could monitor it, I think it will be worth it... Even if it's not something that reports to someone else, but it gives them a score that they can just keep an eye on themselves, that type of thing I think, would be quite helpful.”

“Yeah, you can monitor your own cognitive health. It's a bit better than doing a brain training app on the on your phone.”

“So yeah, at least I've got some handle on what's going on.”

Future work

- How can we raise awareness about the risks of cognitive decline and potential benefit of HAs among HA users?
- How we can embed cognitive assessment in HA clinics considering expectations from patients, clinicians and practical aspects e.g. limited time?
- How can the results of cognitive testing be used by both audiologists and patients?
- Do audiologists need additional education and training to be able to use the results?

Take home messages

- Dementia numbers are increasing nationally and internationally
- We can reduce our risk for future dementia with lifestyle changes by up to 40%
- Hearing loss in middle age has been identified as a key risk factor for future cognitive decline or dementia
- Awareness of the link between hearing loss and cognitive decline/dementia is still poor
- Importance of wearing hearing aids to reduce the risk for future cognitive decline decline/dementia
- Potential to screen for cognitive changes as part of hearing screening to allow better hearing aid provision and earlier detection of cognitive decline
- Earlier detection allows for earlier intervention to reduce our future risk for dementia

Thank you

Questions?