



Promoting brain health: from evidence to action

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University of
Strathclyde
Glasgow

**Brain
Health**
Scotland

Overview



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- **Brain health – what goes wrong and identifying predictors**
 - **Professor Alan Gow**
- **Intervention research – memory strategies and volunteering**
 - **Professor Louise Brown Nicholls**
- **Evidence to action – Brain Health Scotland programmes**
 - **Dr Joanna Crispell**

Brain health – what goes when and identifying predictors

Professor Alan J. Gow
Heriot-Watt University, Edinburgh

www.linkedin.com/in/alan-gow/



Decision
making

Problem-
solving skills

Attention

Remembering
things

Speed of
thinking

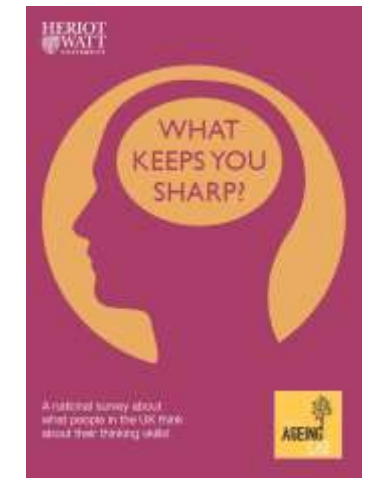
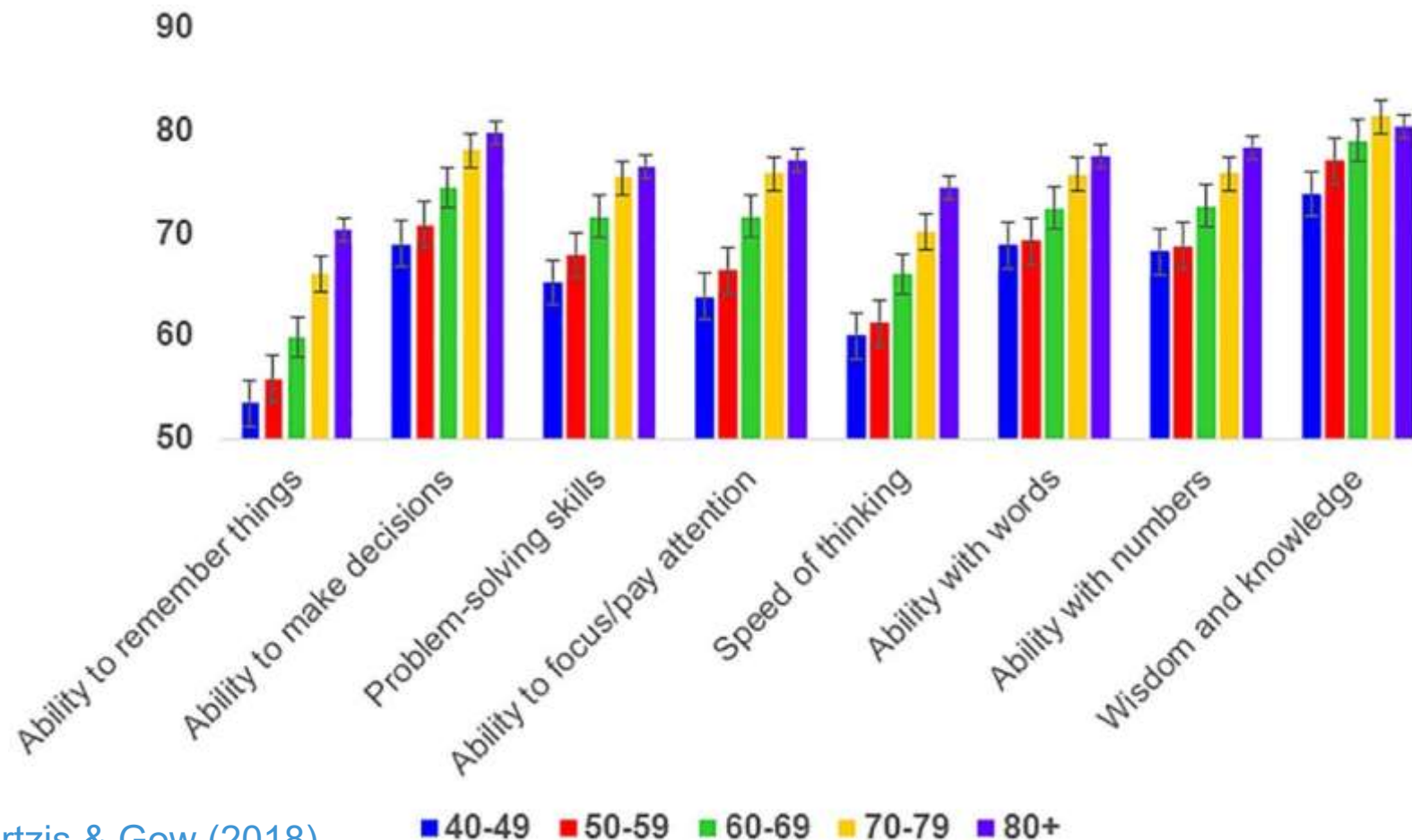
Word skills

Number skills

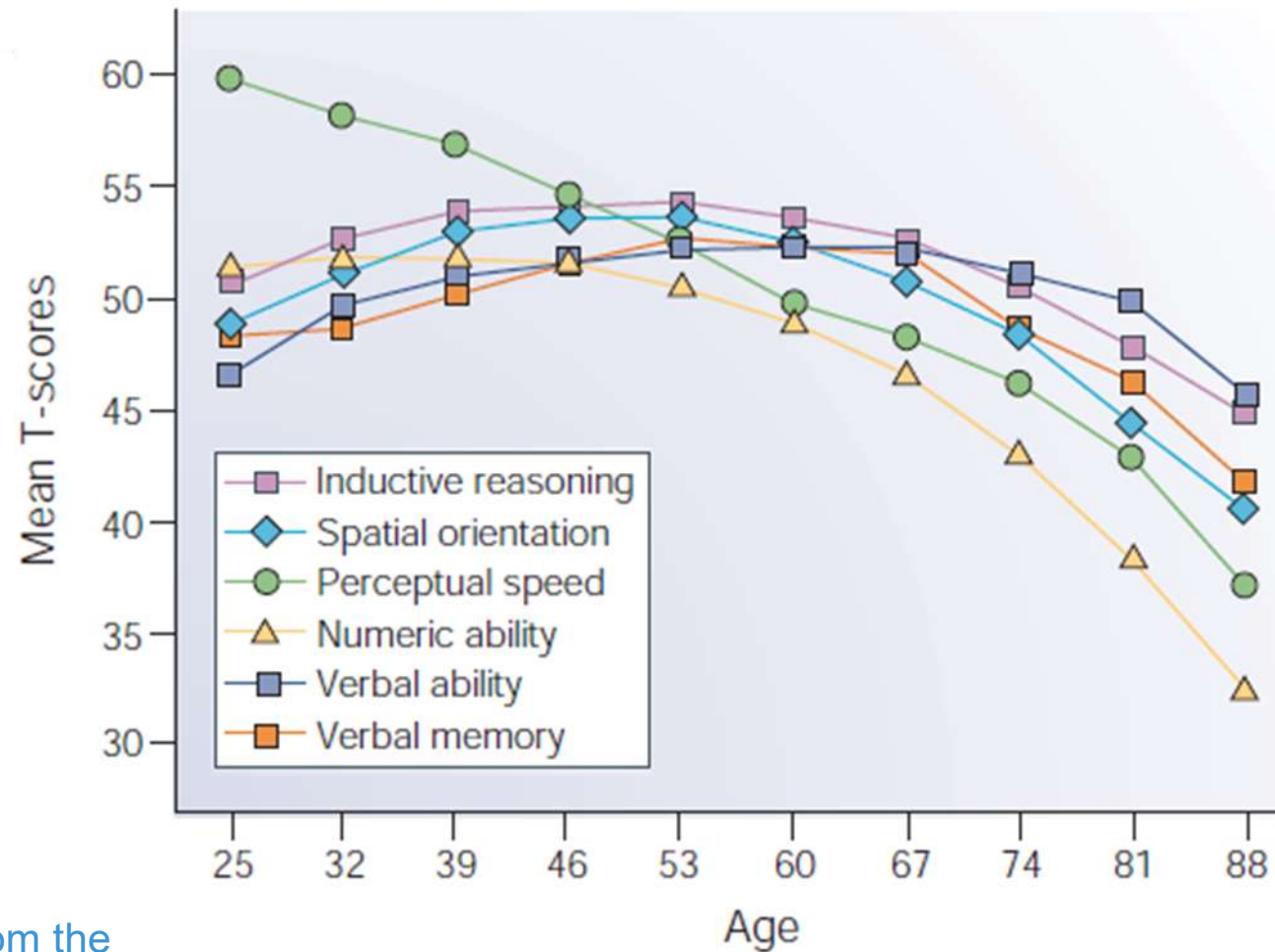
Wisdom and
knowledge



What age do thinking skills start to decline?

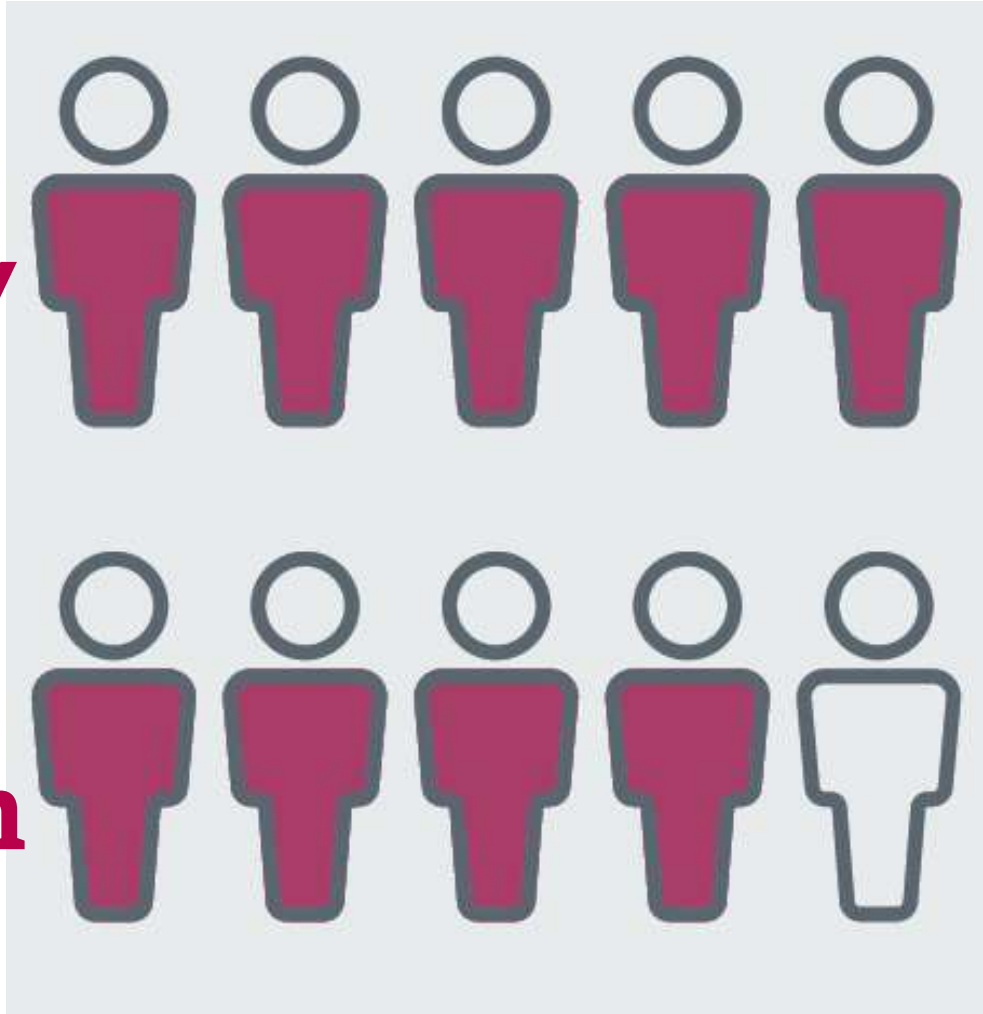


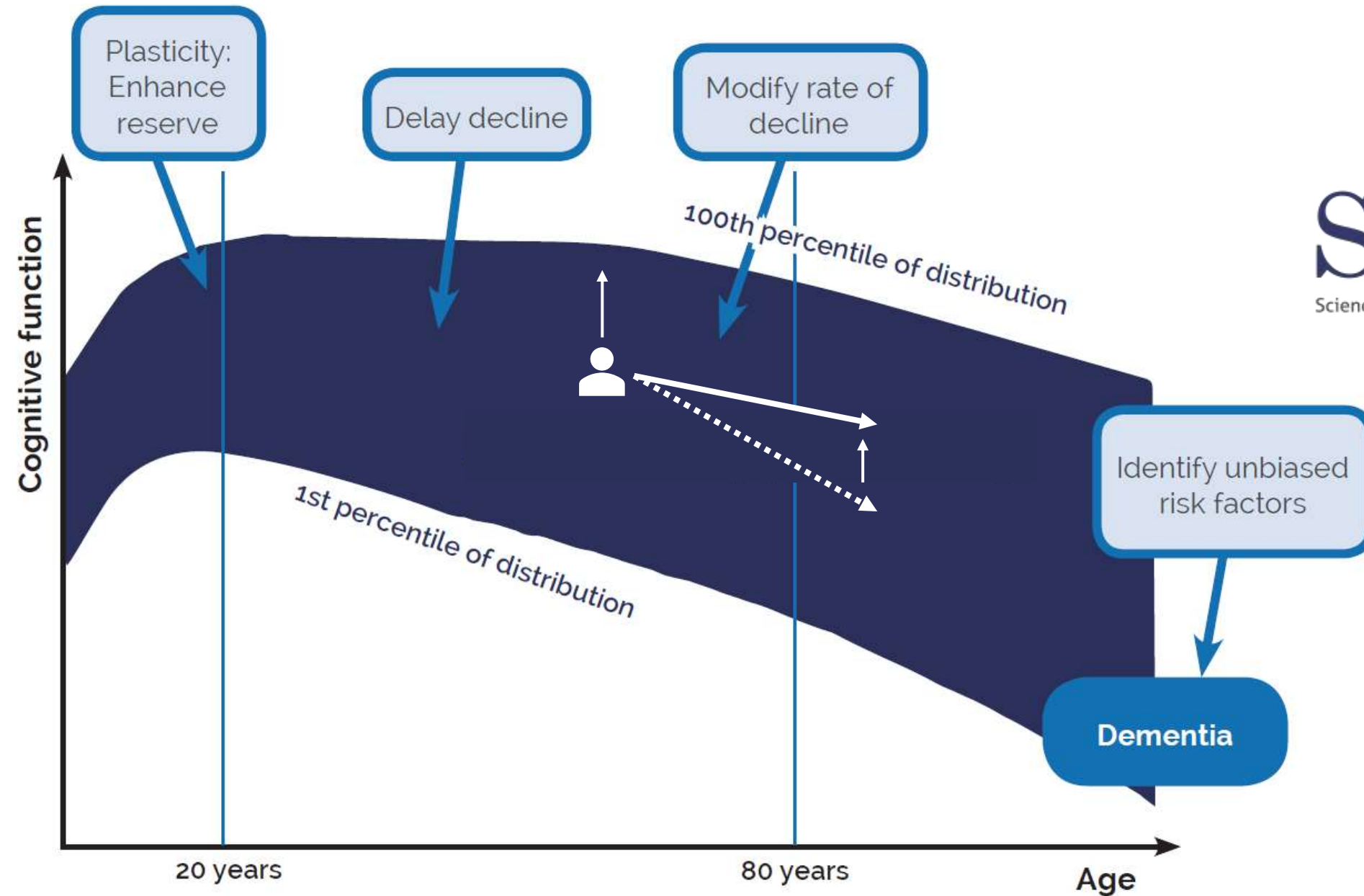
What is cognitive ageing?



Is it possible?

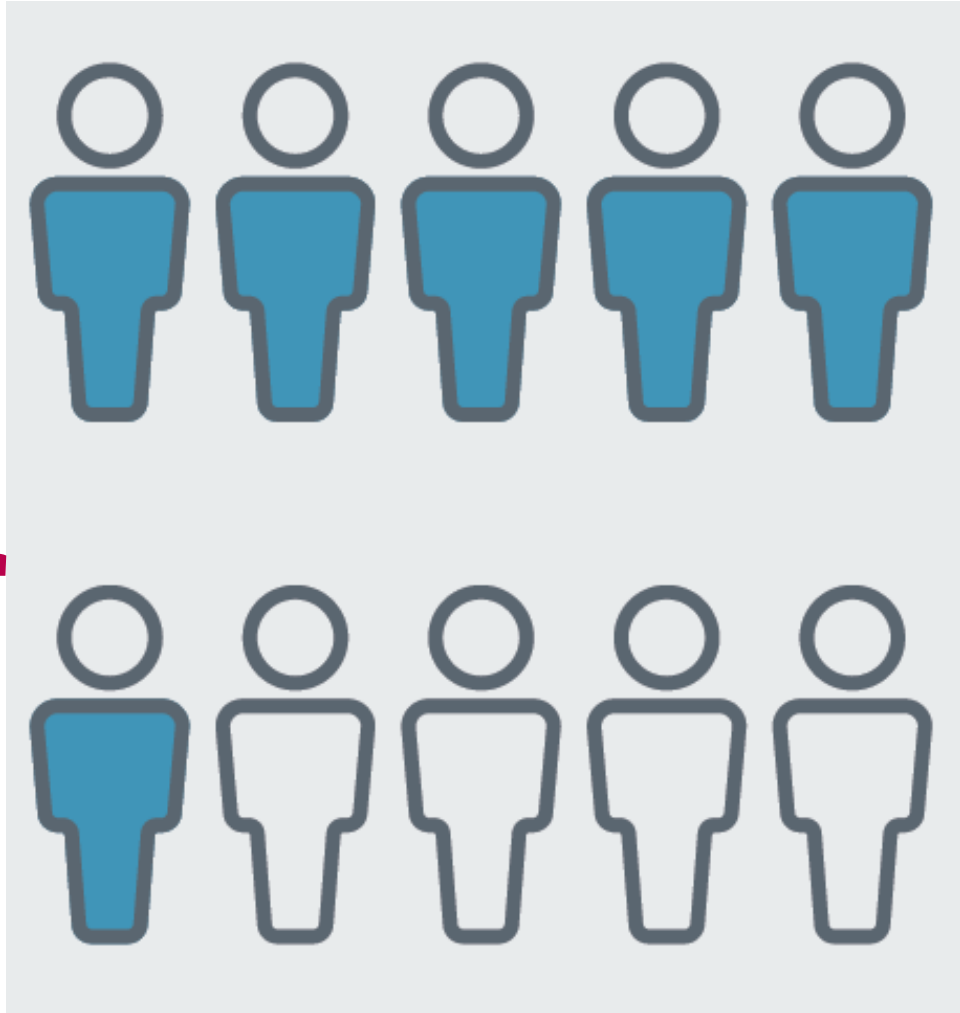
**Can
people
maintain/
improve
their
thinking
skills with
age?**



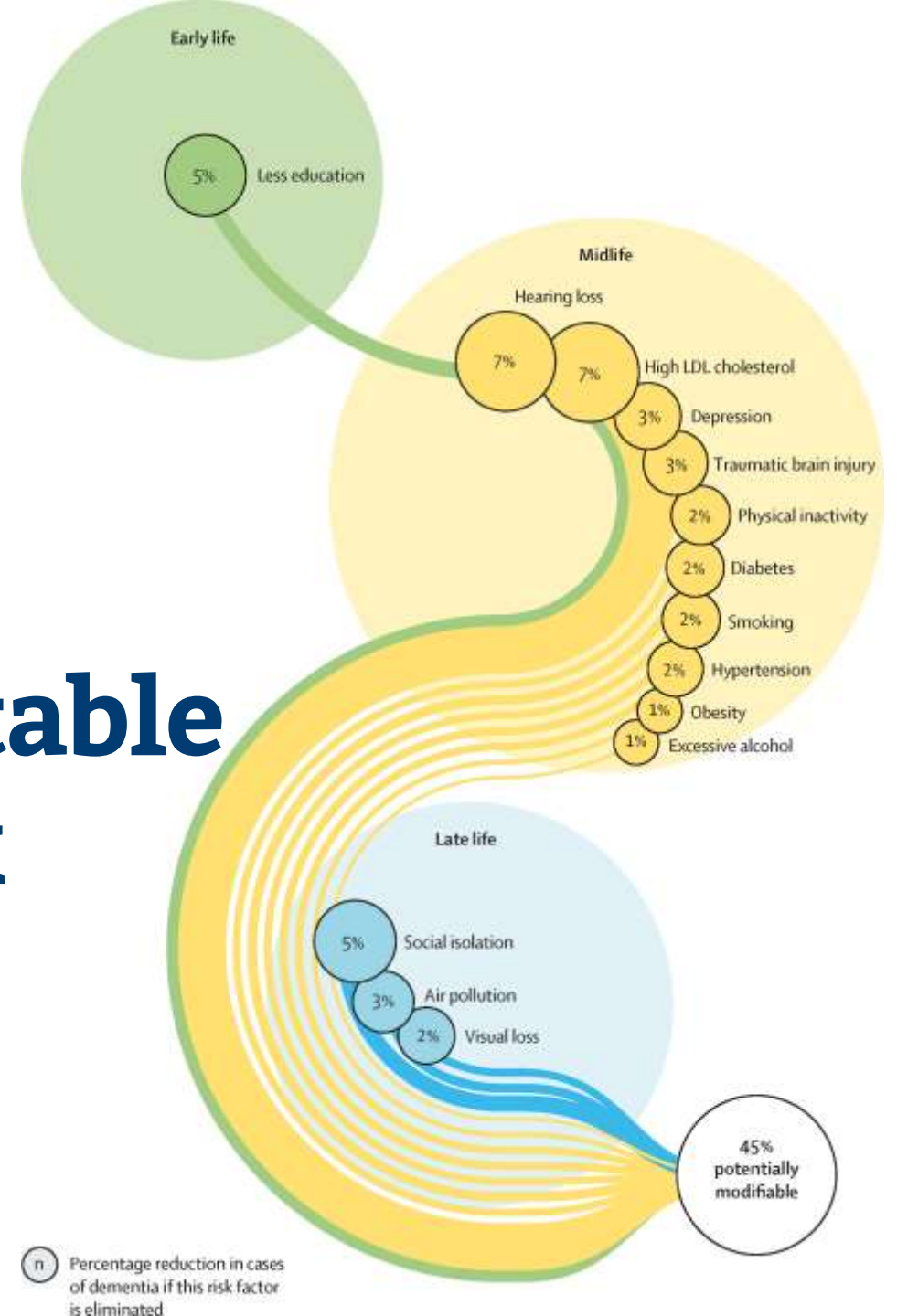


What should I do?

**Do you
know
how to
keep your
brain
healthy?**

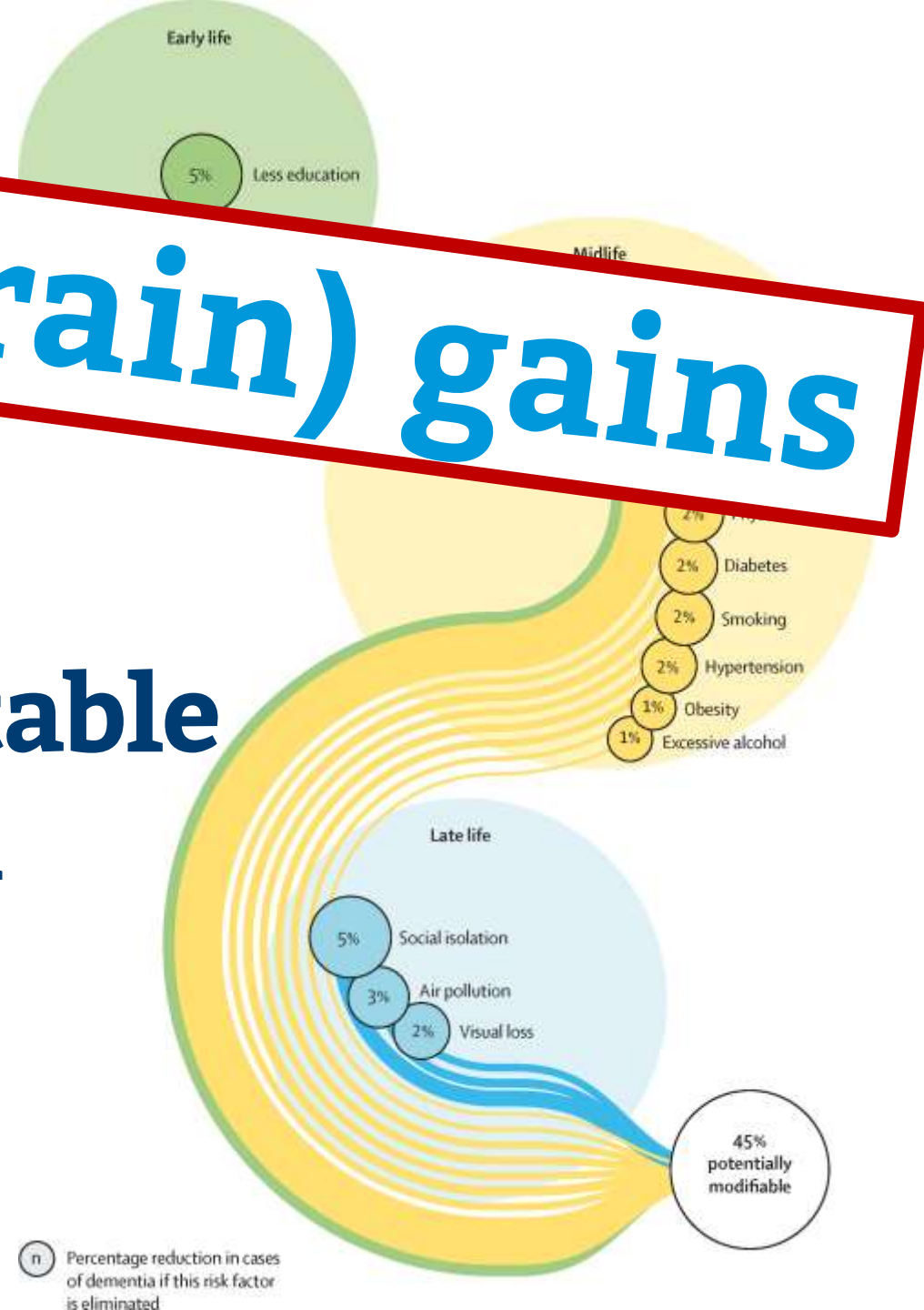


- **Lancet Commission**
 - **14 risk factors**
 - **~45% of cases attributable to combination of risk factors**



Marginal (brain) gains

- Lancet Commission
 - 14 risk factors
 - ~45% of cases attributable to combination of risk factors



Acknowledgements

- The Intervention Factory is funded by Velux Stiftung

VELUX STIFTUNG

- Coordinated by a local Intervention Factory Forum (comprising colleagues from Age Scotland, NHS Lothian, the City of Edinburgh Council, the Scottish Older People's Assembly, Education Scotland) and an international Advisory Panel (Kaarin Anstey, University of New South Wales; Ian Deary, University of Edinburgh; Mike

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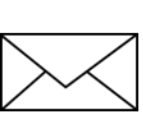
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Intervention Research: Memory Strategies and Volunteering

Professor Louise Nicholls

Department of Psychological Sciences & Health
University of Strathclyde

U3A Brain Health Webinar
Thursday 24th September 2026



l.nicholls@strath.ac.uk



ResearchGate

Developing interventions for brain health

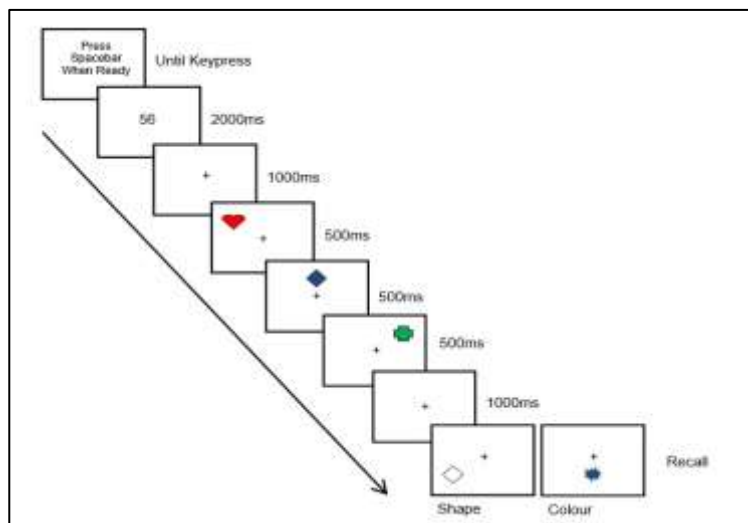


Research in the lab and in the real world... it's all important!

Assessing 'real-world' visual memory



Dr Gerard Campbell



Allen et al. (2021)



Spontaneous strategy assessment

“How you have been trying to remember the information?”

“Well, I tried to...”



Strategy	Response (Strongly disagree to Strongly Agree)
I grouped information together	Disagree
I used words, either in my head or aloud	Agree
I concentrated on the information	Strongly Agree
I used pictures in my head	Strongly Agree
I thought about what the information meant (e.g., by creating stories, thinking about an object's use)	Disagree
I tried to take in all of the information while on the screen	Disagree
I focused on just some of the information	Strongly Agree

Click/touch here to submit

Theory-driven strategy framework (e.g. Gonthier (2020), Morrison et al. (2016))

Note. Strategy probes worded in collaboration with our stakeholder panel.

Poll – everyday strategy use

How frequently do you use strategies to help you remember things?

For example:

- leaving important items in a key/prominent place
- writing information on a notepad/calendar/phone app
- associating information with what you already know (e.g. learning someone's name)



Long-term item and associative memory task

Item Recognition Test



YES

NO

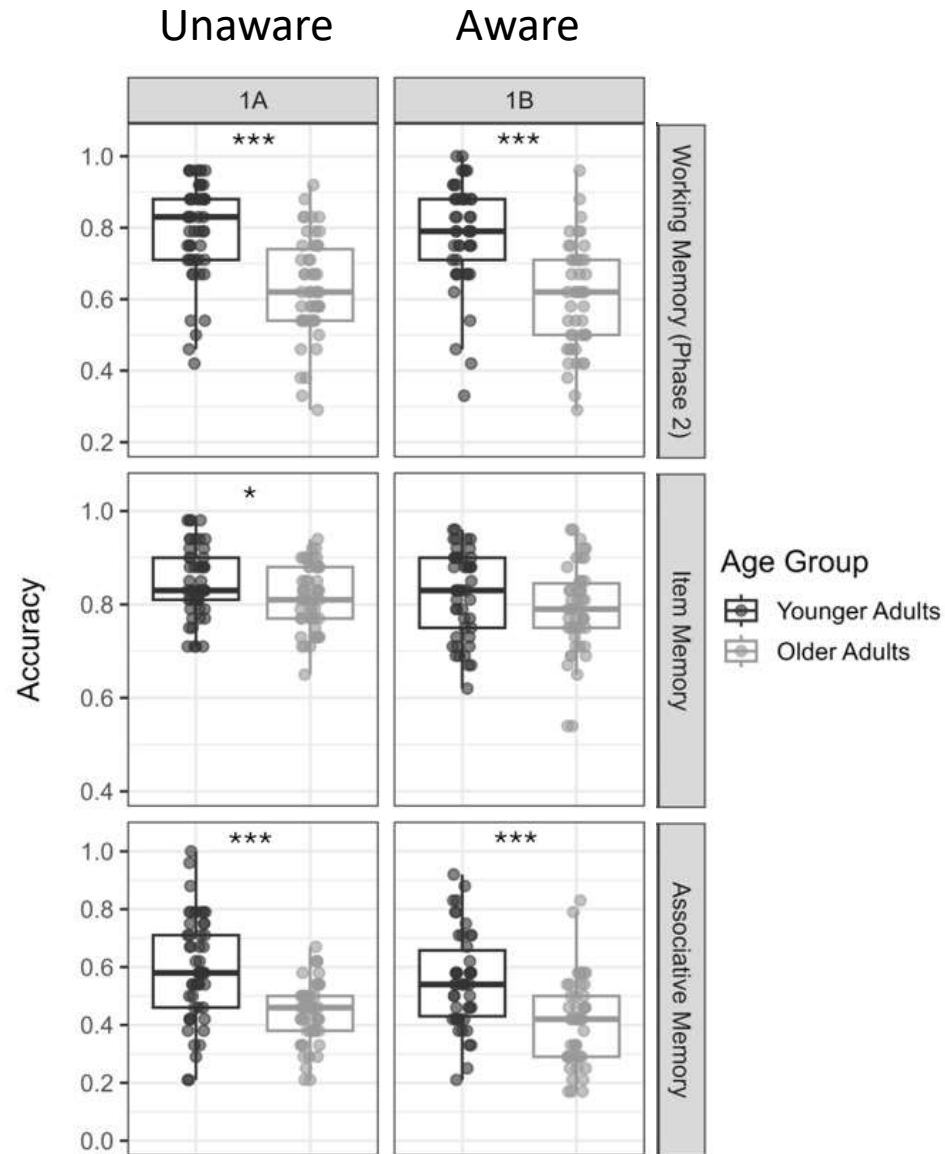
If 'old' item

Object-Colour Associative Memory Test



- Studies varied regarding foreknowledge of the later long-term memory test (e.g. Old & Naveh-Benjamin, 2008)

Memory performance by age group



Biggest age differences for:

- short-term (immediate) memory
- Remembering associations rather than individual items in long-term memory

Foreknowledge of the long-term memory task does not affect overall performance

BUT...

Strategy predictors of memory performance

Short-Term Memory Performance
(Unaware of Long-term Memory Task)



Long-term memory performance
(Aware of Long-term Memory Task)



- 1) Assess performance over time and in relation to people's characteristics
- 2) Investigate patterns of eye movements and brain functioning related to instructed strategies
- 3) Co-design information resources about brain ageing and strategies ('Strategy Toolkit')



‘Holistic’ engagement



Dr Anna Krzeczowska
(University of Edinburgh)



- There may be health benefits of social, intellectual, and physical engagement as we age
 - Intergenerational engagement may help achieve more of this holistic engagement

Question for the chat

Do you engage in formal volunteering?

If so, where do you volunteer and what are the main reasons/motivations for doing so?



Our pilot study: 'Generation for Generation'

Participants
aged 60-85
years

- PVG & health screening
- baseline testing (cognitive, physical, & psycho-social wellbeing)

Control OR intervention group
(N = 36; 8 hrs/week for 6 months)

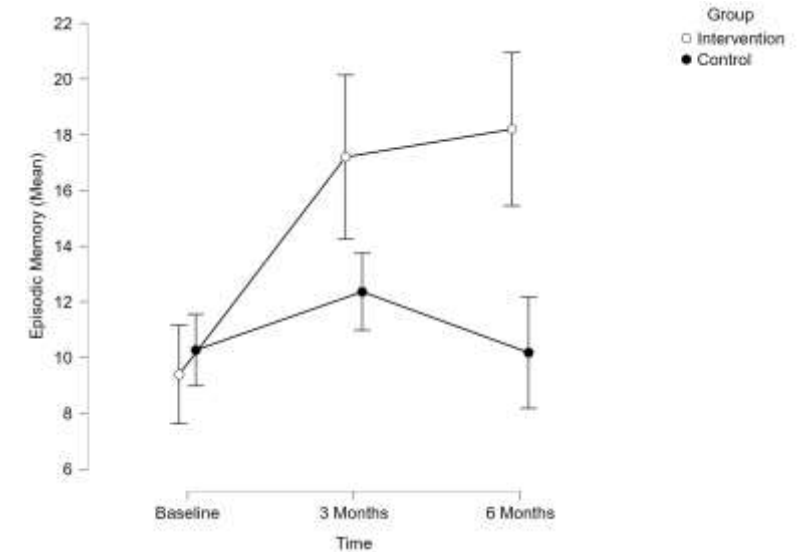
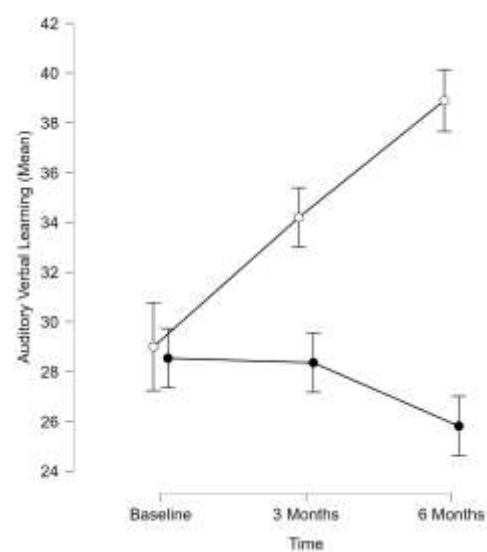
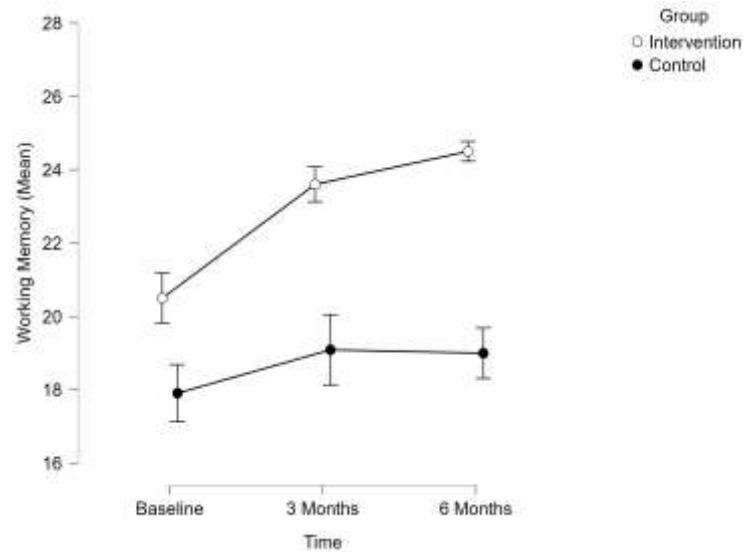
3-month & 6-month follow-up
testing

Focus groups (children, teachers, volunteers)

Participants from
control group
could join a school
after study.

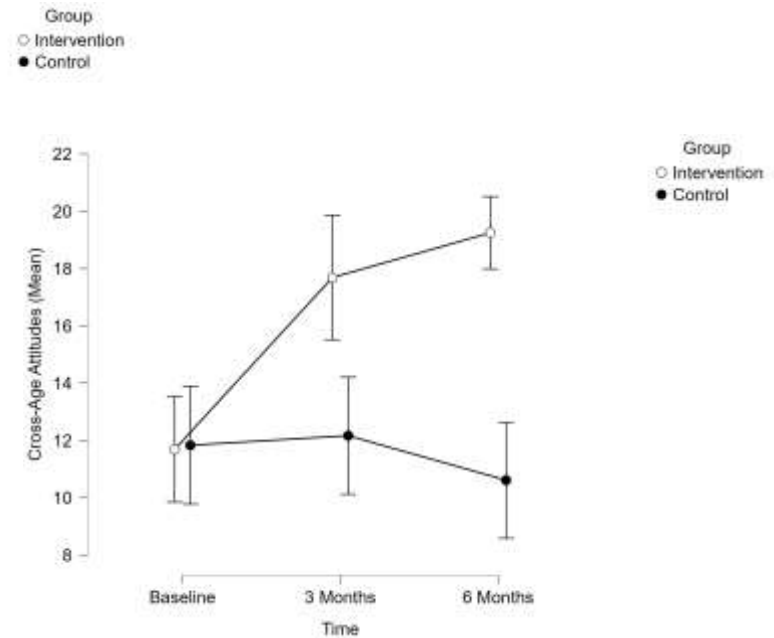
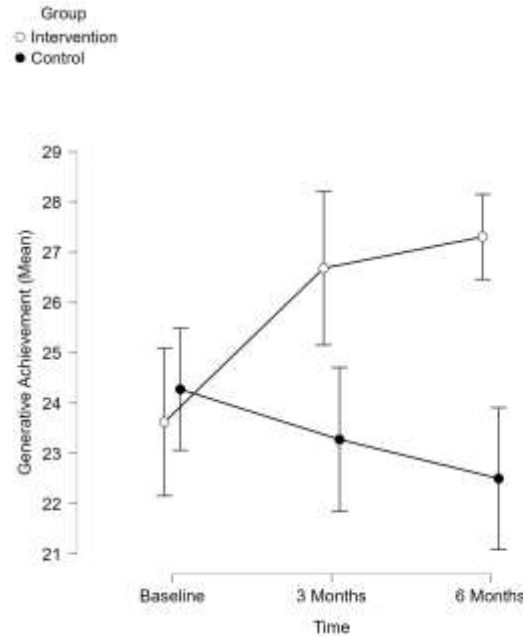
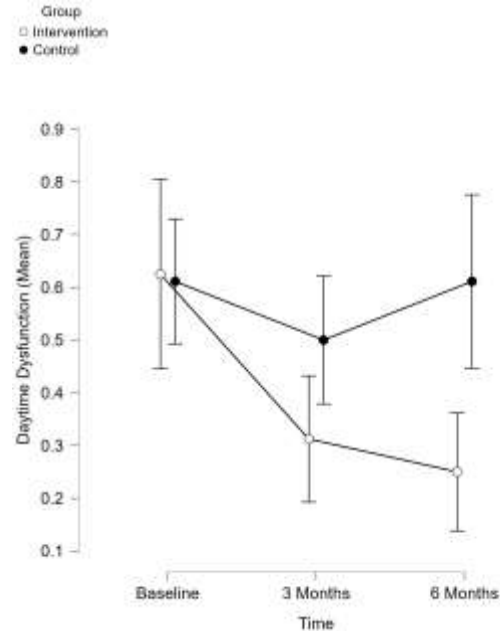
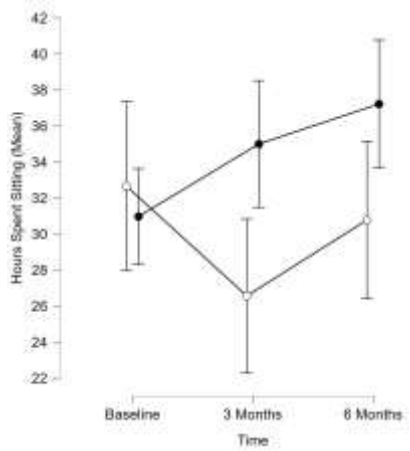


Outcomes – thinking skills



- 3 of 5 cognitive measures benefitted from the intervention

Outcomes – health & social functioning



- Fewer hours spent sitting
- Less sleepy during the day
- Greater sense of supporting the younger generation
- More positive attitudes towards younger people

Qualitative research findings

- Volunteer focus groups revealed 5 key themes:
 - motivators for joining in
 - reinforcers of engagement
 - challenges of engaging
 - barriers to engaging
 - importance of the engagement

Sense of purpose:
“Best days of the
week” (V2);
“prevented two
pyjama days” (V5)

A need to share: “I thought it
looked really interesting ... and
I thought, ‘Yeah, I’ve got lots of
time and I’ve got a lot to give’.
And we’ve got life experiences,
and you pass them to the
children”. (V3)



STReaM
STRATEGY TRAINING FOR REAL-WORLD MEMORY

Thank you! 😊



Acknowledgements:

All research participants and collaborators, including STReaM stakeholder panel members and West Lothian Schools

Please contact me if you would like to join our Department's Older Adult Participant Panel, or you would be able to help spread the word!



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ResearchGate



Economic
and Social
Research Council

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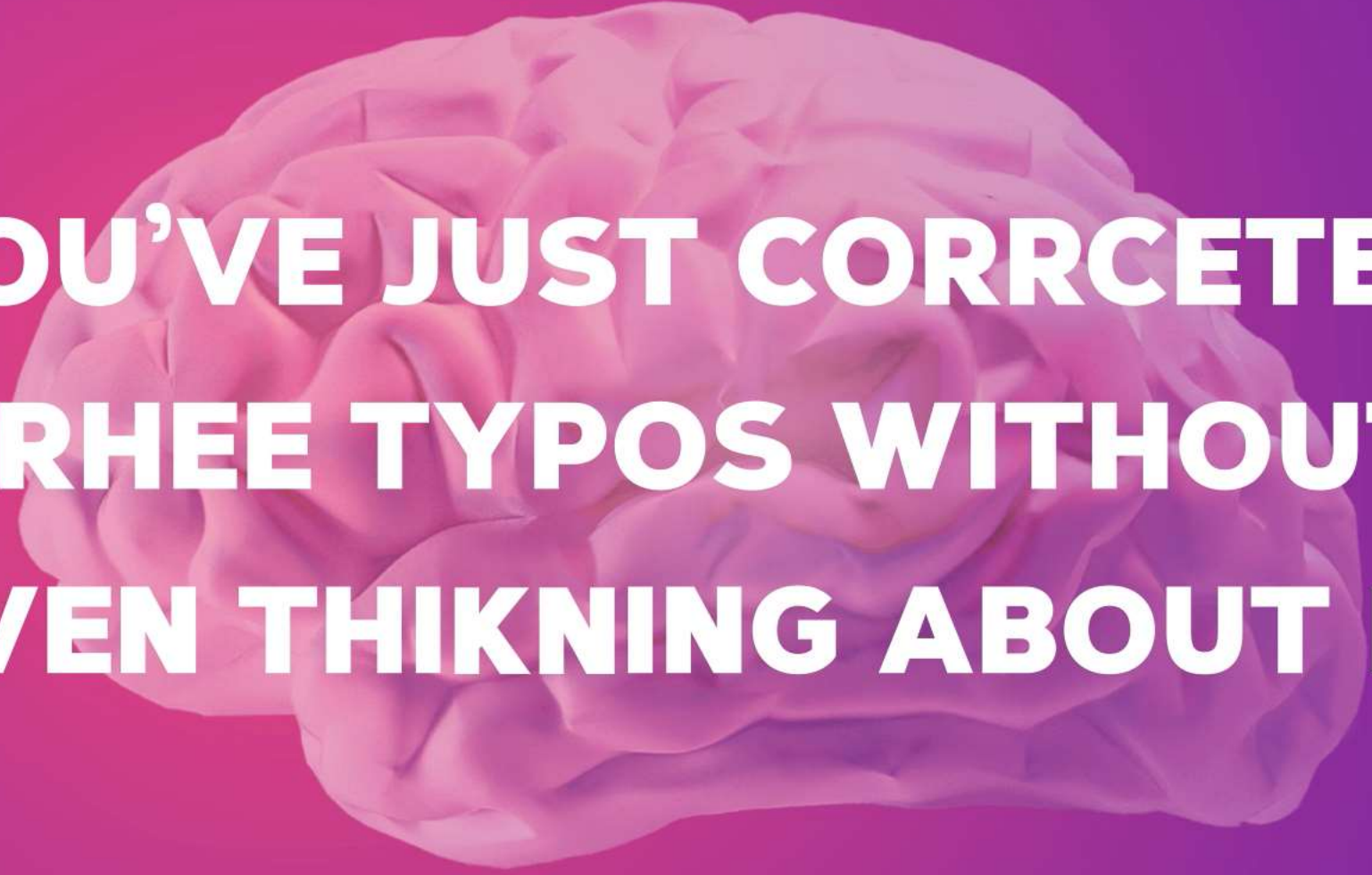
**Brain
Health
Scotland**



**Alzheimer
Scotland**



Prevent.
Care.
Cure.



**YOU'VE JUST CORRCECTED
TRHEE TYPOS WITHOUT
EVEN THIKNING ABOUT IT**

Brain Health
Quiz

Brain Healthy
Workplace

Babs the
Brain

Brain Health
Clinic

Powering
Young Minds

Women's
Brain Health

Mindful
Steps

STARS Schools
Programme

Your Amazing
Brain

Brain Health
Chat

Brain Health Clinic

- A **two-year pilot** developed through collaboration between Alzheimer Scotland, NHS Grampian and the Scottish Government
- A **three-stage model** based at our Aberdeen Centre:
 - initial drop-in brain health support and advice
 - specialist nurse assessment
 - consultant assessment



Brain Health Clinic

"I feel like I know a lot more about brain health now. It has pushed me to get out, and to look after my own mental and physical health."

"At the Brain Health Service, I was listened to, and my concerns were acted upon."



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Mindful Steps

- An eight-week group programme supporting people with memory and thinking problems to understand and protect their brain health
- Combines accessible brain health information with social connection, discussion and interactive activities
- Translates dementia risk-reduction research into practical real-life action



Mindful Steps

"I didn't think a course about brain health would make me smile or laugh as much over 8 weeks."

"This group has been unbelievable, you feel human when you leave. It's very difficult to get someone to talk to who understands where you're coming from [with memory difficulties]."



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Babs the Brain

- 9 locations
- 4,112 visitors
- 54 volunteers
- 29 Alzheimer Scotland staff
- From 380 responses, 68% felt inspired to take action for their brain health and 24% left thinking about making a change.



Babs the Brain

"It was cool learning about your brain. The dementia bit was interesting as we learn about health and stuff, but you don't learn about what happens if you don't." – **Child**

"Really thought provoking for adults as well as fun for kids." – **Adult**



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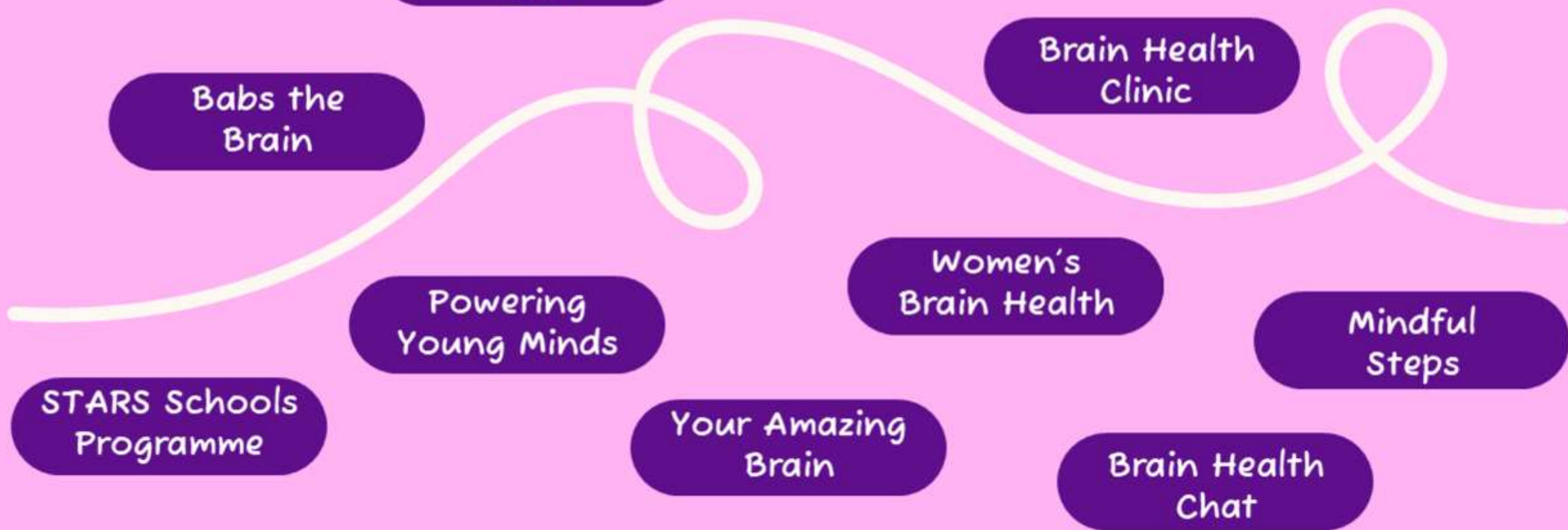
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Brain Health

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STARS Schools Programme

- A primary school programme for children aged 8 to 12
- Teacher-led lesson plans aligned with the curriculum
- A free *Handbook on Children's Brain Health* available for parents/carers
- Uses fun cartoons and creative activities to make complex science engaging and memorable

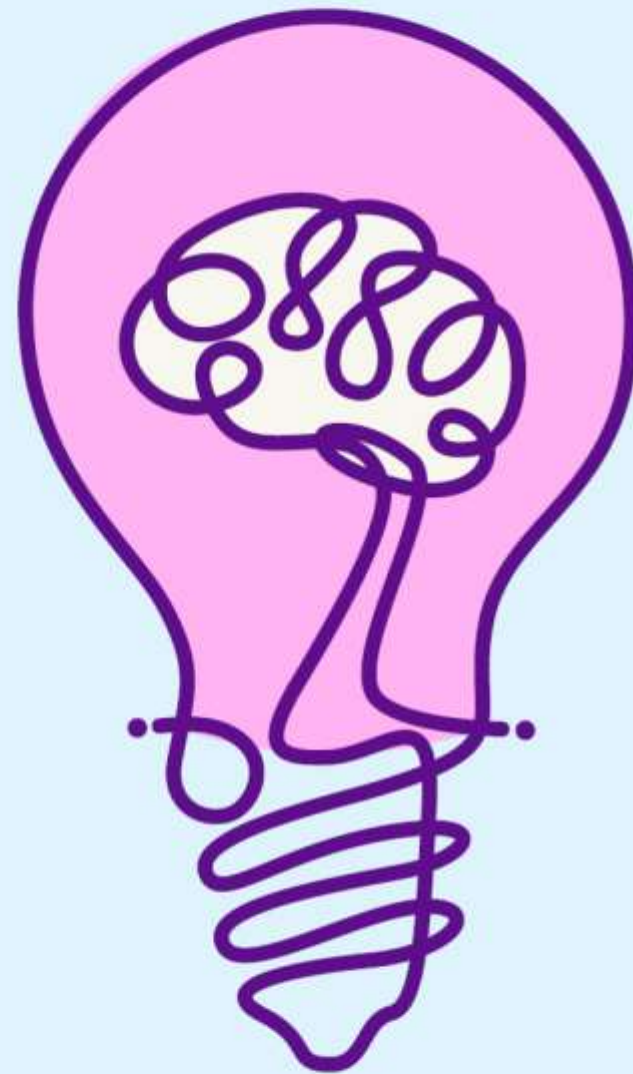
Over
30,000
children
reached



**Take our
quick quiz for
tailored tips:**



brainhealth.scot/quiz



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**Brain
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Healthy Ageing Showcase

James Watt Centre

Wednesday 7th October 2026

Please scan the QR code to register your attendance on Eventbrite.



Global Research Institute in Health and Care Technologies