

Brain Ageing: What do we know and how will it help us?

Professor James Goodwin PhD
Chief Scientist
Age UK

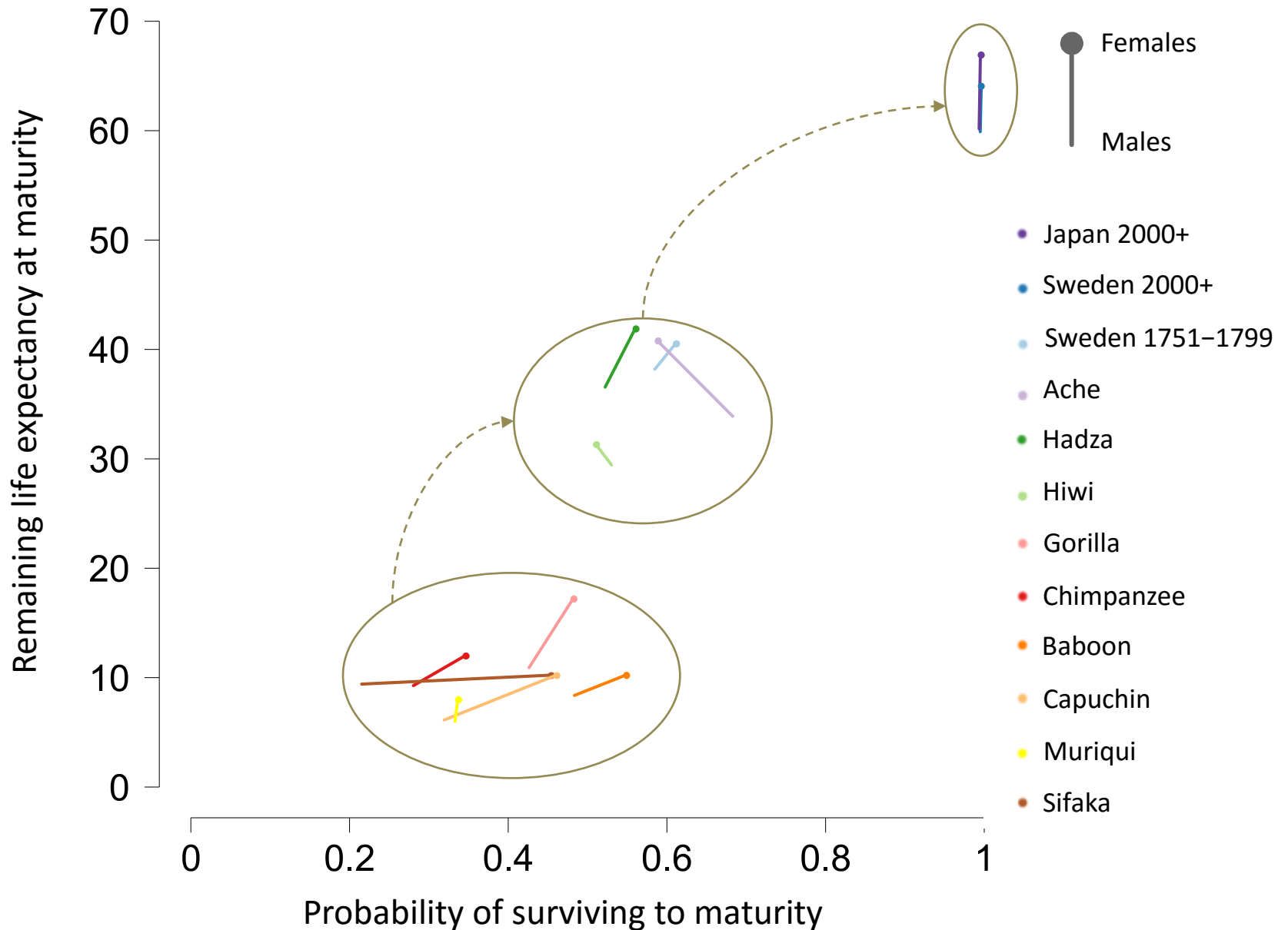


Overview

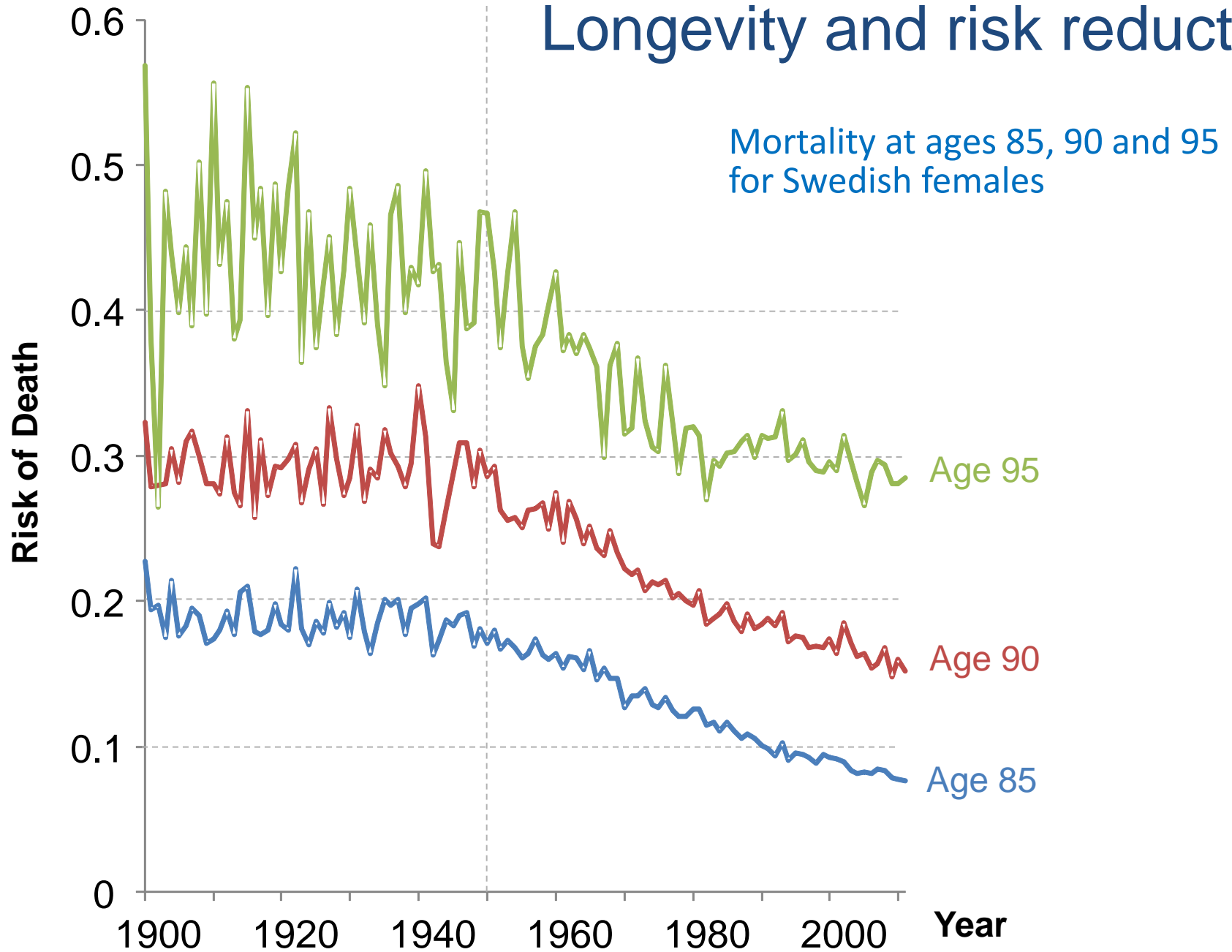
- Population ageing and the prevalence of disease, including co-morbidities associated with cognitive function and dementia
- Brain ageing, including functional and structural changes, with individual differences
- Risk reduction, protective factors and interventions



The origin of longevity



Longevity and risk reduction

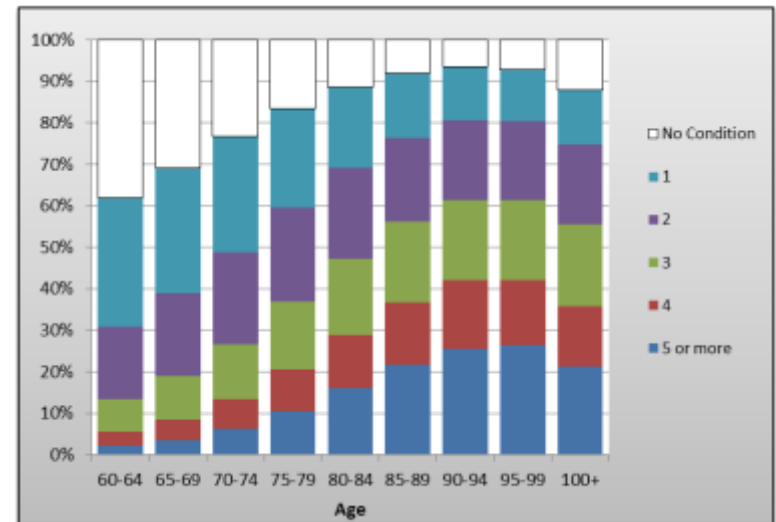
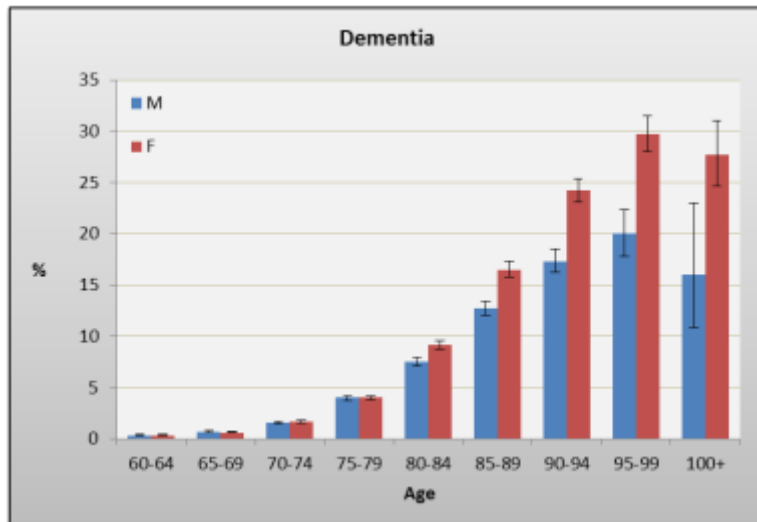
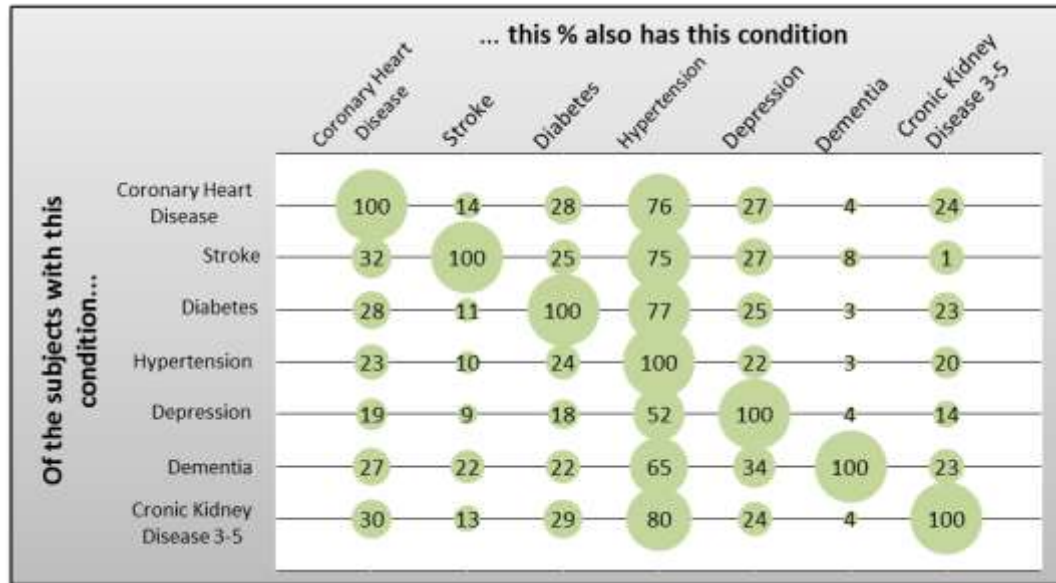


Implications of longevity



The rise of the six (or is that seven) generation family

Implications of longevity



Brain Ageing



Grey
Matter



Brain Ageing

White Matter

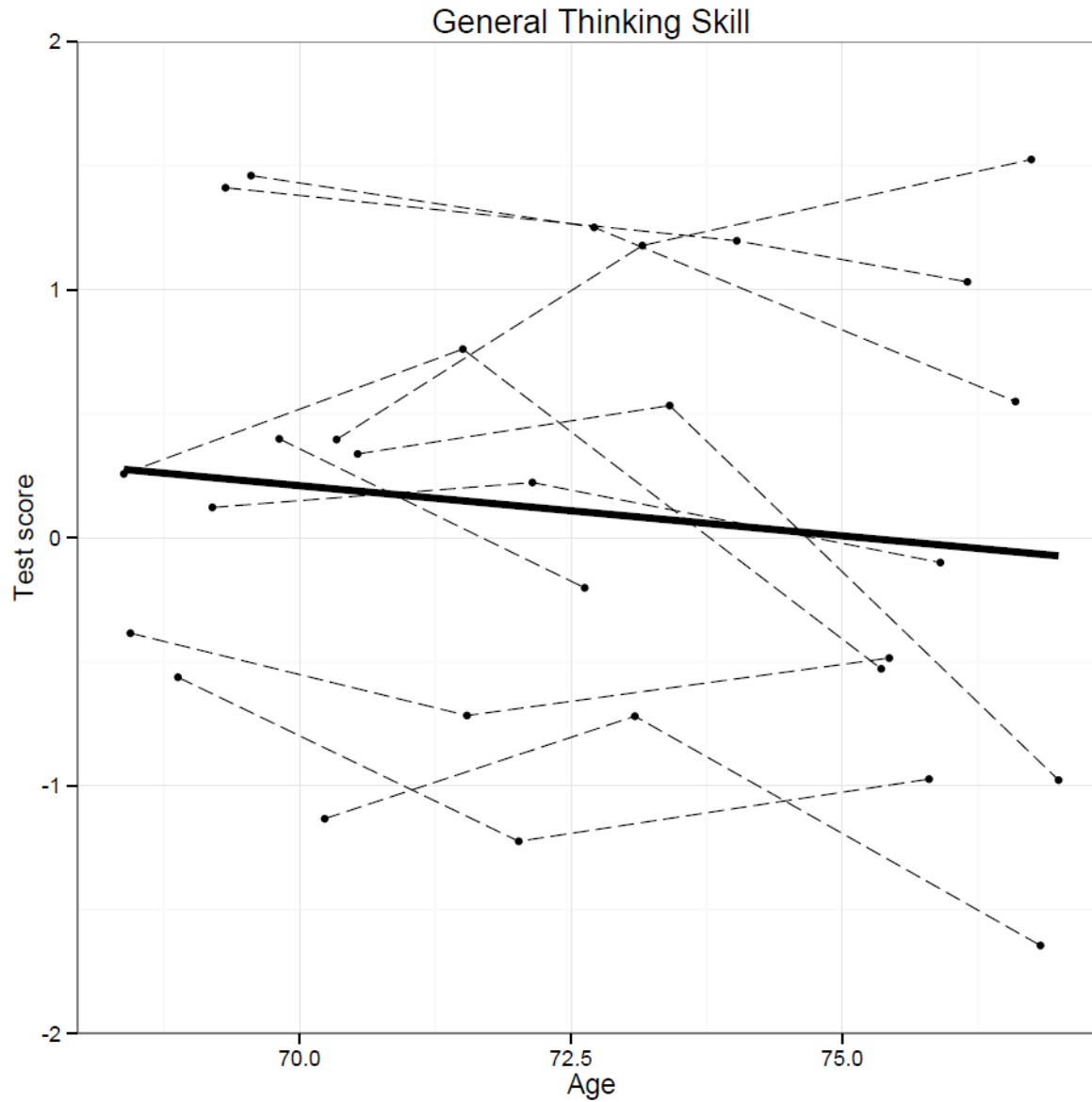


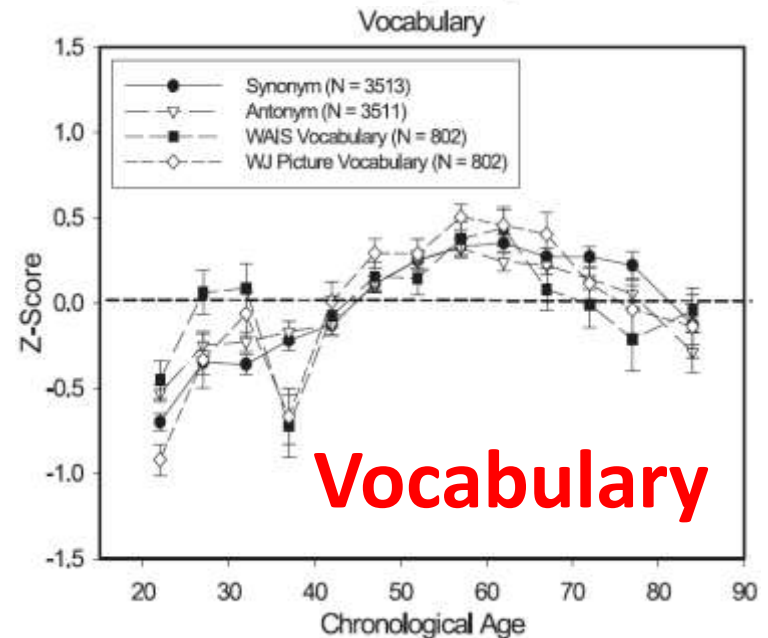
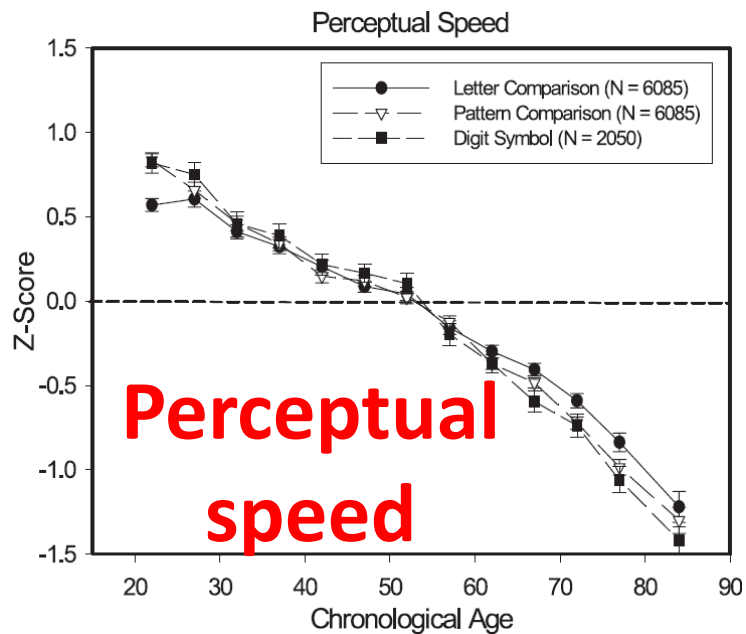
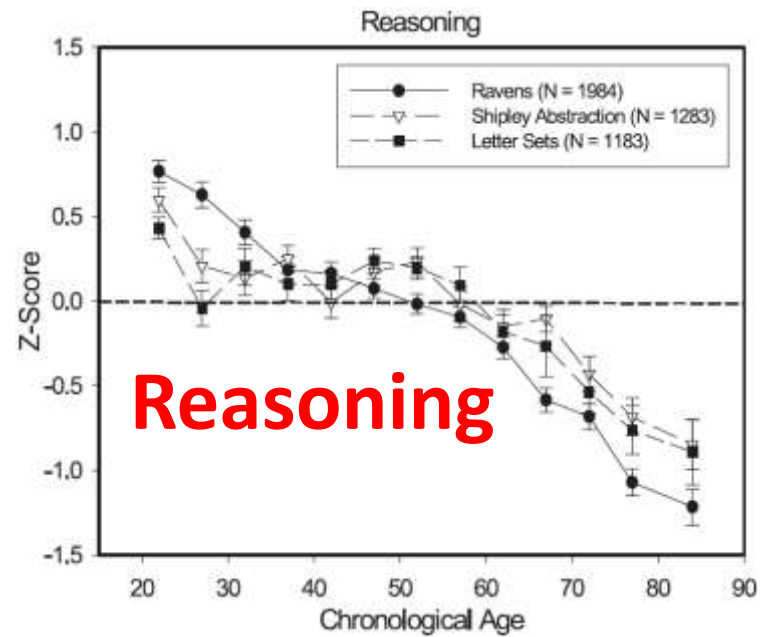
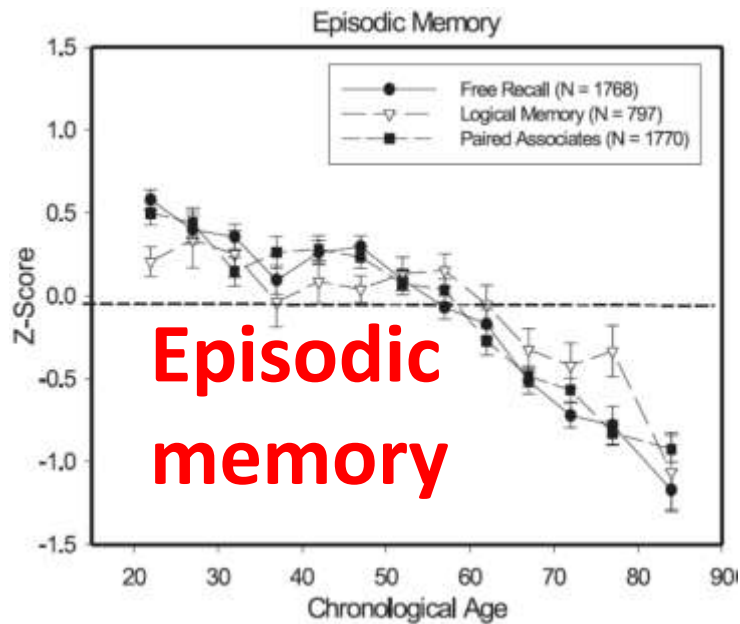
Brain Ageing

The human brain from
25 to 90 years
(in 21 seconds)



Brain Ageing





Risk reduction, protective factors and interventions



Why do people of the same age vary markedly in their cognitive and brain health?

- The biggest factor – about half the variation – is childhood IQ
- Of the other half, 25% is due to genetic factors
- The remaining 75% is environmental and stochastic factors

Protective Factors (independent effect)

- Not smoking
- Physical activity and fitness
- More education
- Profession or occupation
- Low allostatic load
- Bilingualism
- Less shrunken brain
- Less shrunken brain

Factors appearing not to make an independent causal contribution to cognitive function in later life

- Caffeine
- Body Mass Index
- Social and intellectual engagement
- Alcohol
- Cholesterol





Global Council on Brain Health

A COLLABORATIVE FROM **AARP**[®]

Mission:

To provide trusted information on how all of us can maintain and improve our brain health. Clear and dependable recommendations generated by GCBH are based on the latest scientific evidence provided by scientists, doctors, scholars and policy experts from around the world



Physical Activity, Exercise and Cognition (GCBH)



- Physical activity has a positive impact on brain health.
 - a. A physically active lifestyle (e.g. walking, using the stairs, gardening, etc.) provides benefits for brain health.
 - b. Targeted exercise (e.g. brisk walking, cycling, strength training, etc.) provides benefits for brain health.
- Based on randomised control trials, people who participate in targeted exercise show beneficial changes in brain structure and function.
- Based on epidemiological evidence, people who lead a physically active lifestyle have lower risk of cognitive decline.



Thank you for listening

james.goodwin@ageuk.org.uk

