

FIRST RESULTS FROM A COMMUNITY TRANSLATIONAL STUDY ON DEMENTIA PREVENTION IN SINGAPORE

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Research

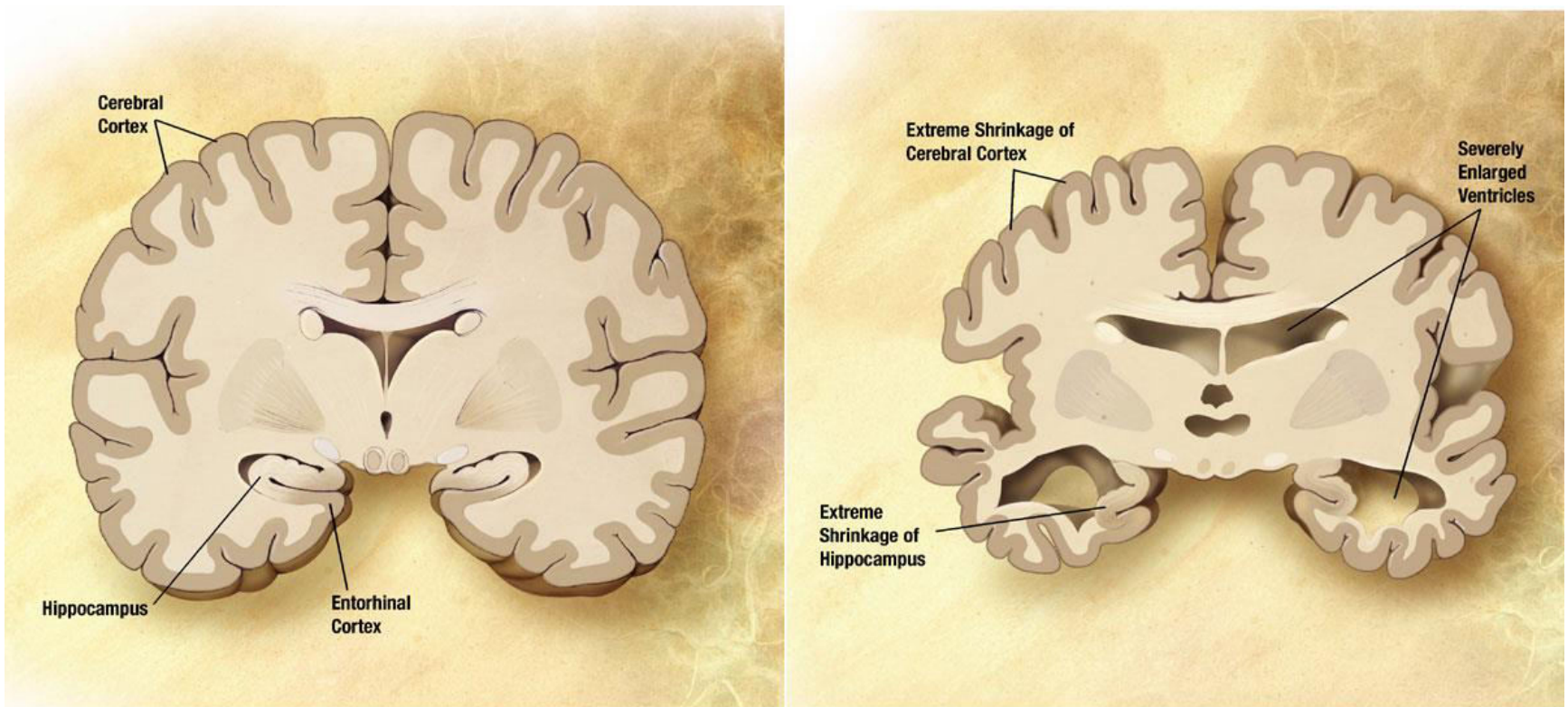
Clinical

Care

Outline

1. Background
2. Successful ageing model
3. Dementia Prevention Program (DPP)
4. Age Well Everyday (AWE) Program
5. Take home messages

Gross changes in the brain in dementia



A representation of the normal human brain on the left, and the brain affected by Alzheimer's disease on the right.

Microscopic changes in the brain in dementia

Upon autopsy, Dr. Alzheimer described seeing “Plaques and Tangles” in the brain.

“Plaques”

“Tangles”



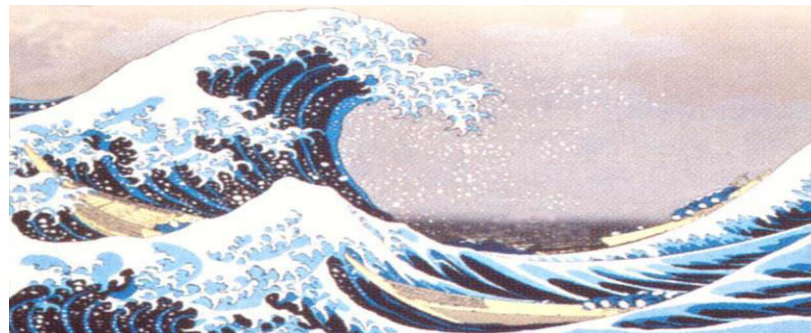
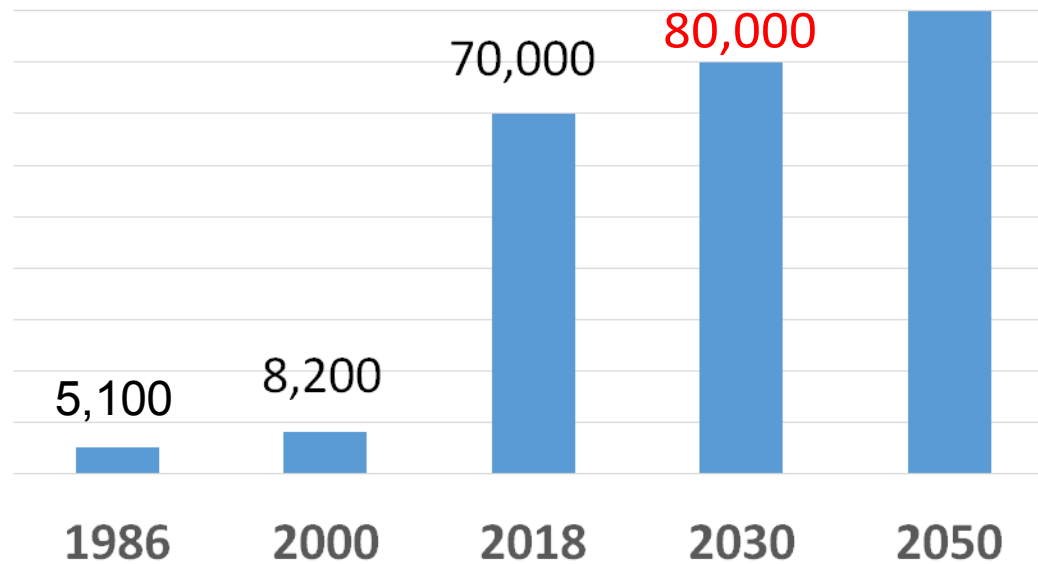
Alzheimer cells



healthy cells

The Rising Tide

Estimated Number of Dementia Cases in Singapore



2-Successful ageing model

Developed by the Interministerial Committee on Ageing in Singapore in 1999– this successful ageing model has 4 components:

- Active ageing
- Healthy ageing
- Ageing in place – Environmental safety
- Financial independence

2007 IPA RESEARCH AWARDS – SECOND-PRIZE WINNER

Physical, social and productive leisure activities, cognitive decline and interaction with APOE- ϵ 4 genotype in Chinese older adults

Matthew Niti,^{1,2} Keng-Bee Yap,^{1,3} Ee-Heok Kua,^{1,2} Chay-Hoon Tan^{1,2} and Tze-Pin Ng^{1,2}

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³*Department of Geriatric Medicine, Alexandra Hospital, Singapore*

Healthy Ageing

Importance of Healthy Lifestyle

健康生活方式的重要性

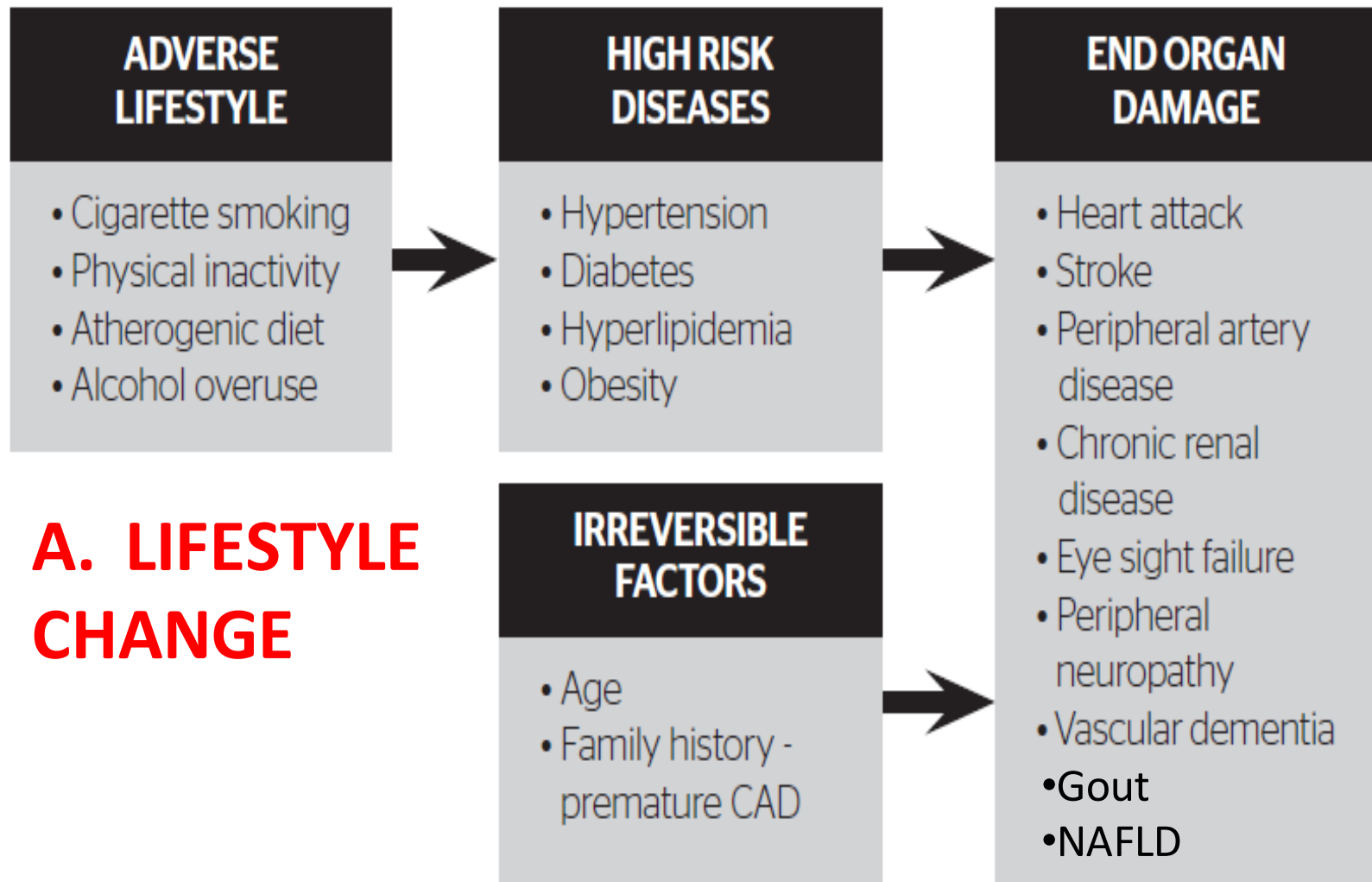
Research shows that dementia could be prevented by reducing the following 6 risk factors:

研究显示，通过减少以下6个危险因素，可以帮助预防老年失智症

- Physically inactive 缺乏运动
- Smoking 抽烟
- Midlife hypertension 中年高血压
- Midlife obesity 中年肥胖
- Diabetes 糖尿病
- Depression 抑郁

Sam Norton et al, Potential for primary prevention of Alzheimer's disease : as analysis of population-based data. Lancet 2014; 13:788-794

FIGURE 1. LINKS OF ADVERSE LIFESTYLE, HIGH RISK DISEASES AND END ORGAN DAMAGE



A. LIFESTYLE CHANGE

Source: MOH, 2011

3-Dementia Prevention Program (DPP)

Jurong Ageing Study 2012

10-year follow-up study

- Health education talks
- Tai-chi exercise
- Mindfulness practice
- Music-remembrance
- Art therapy



The Lancet Psychiatry 2014

Dementia Prevention Programme

预防失智症的活动 Queenstown CC



健康讲座



拍打操

Dementia Prevention Programme

预防失智症



园艺



正念



怀旧音乐

Horticultural Therapy and Mental Well-being

Kua EH, Sia A. Green City. Springer 2017



PROJECT FEATURES

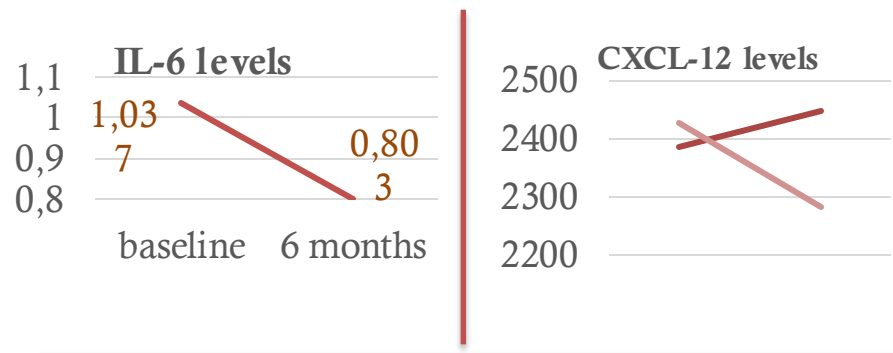
Therapeutic Garden @ HortPark: Enhancing Nature for Mental Well-Being

Text by Angelia Sia and Chelsea Sia
Images by Chelsea Sia

Project Credits
Location 33 Hyderabad Rd,
Singapore 119578 Client/Owner
National Parks Board Completion Date
14 May 2016 Landscape Architect
Andrew Foke (National Parks Board)
Hardscape Contractor Landscape
Engineering Pte Ltd Landscape
Contractor Tropic Planners &
Landscape Pte Ltd Site Area 850sqm
Sponsors Gerontology exercise
equipment from CT-Art Creation
Pte Ltd and Sculpture from
Soroptimist International of
Singapore (Garden City)

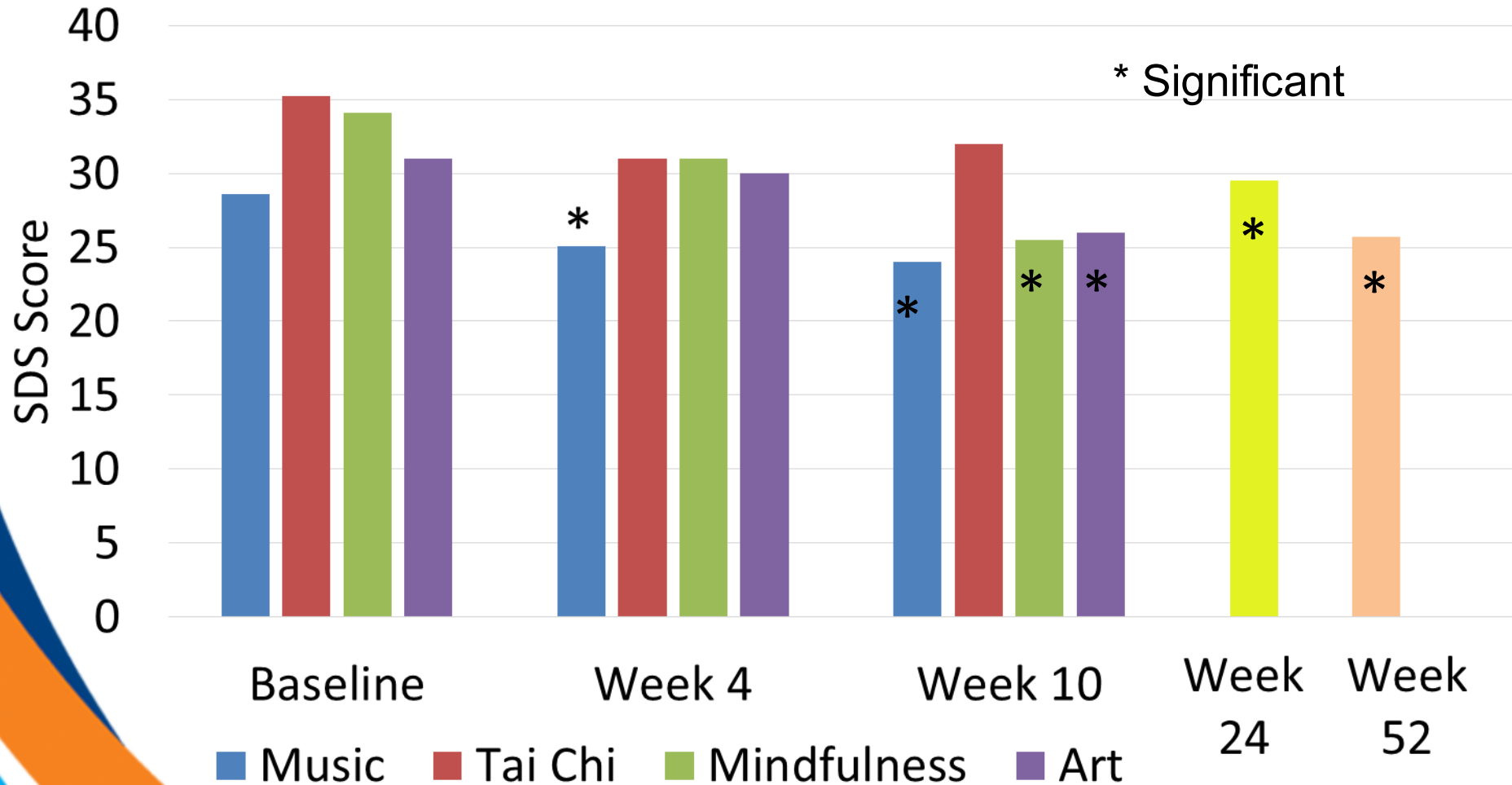
Reduced Inflammation of Neurons

- **Significant decrease in IL-6**
- **Slight increase in CXCL-12**
- **Low CXCL-12 associated with Alzheimer's**



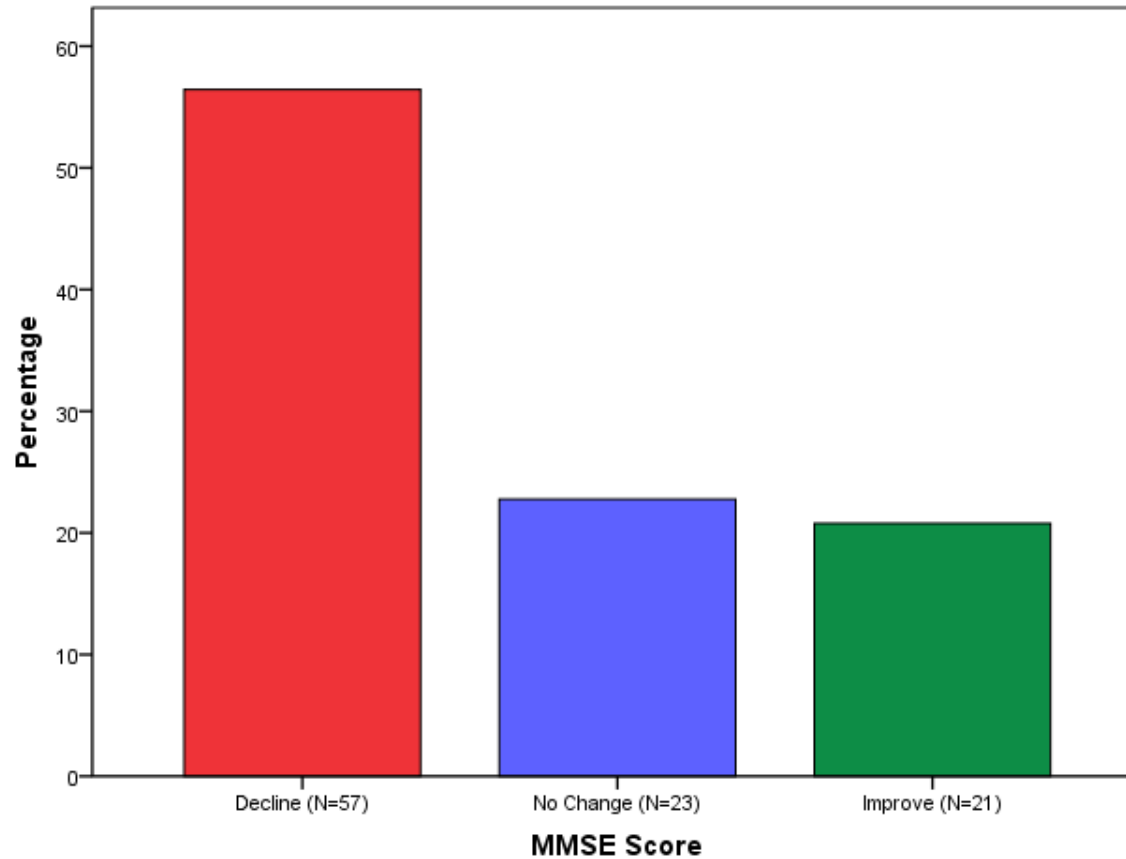
Subsyndromal Depression and Anxiety

Rawtaer I, Mahendran R, Kua EH et al, APPSY 2015



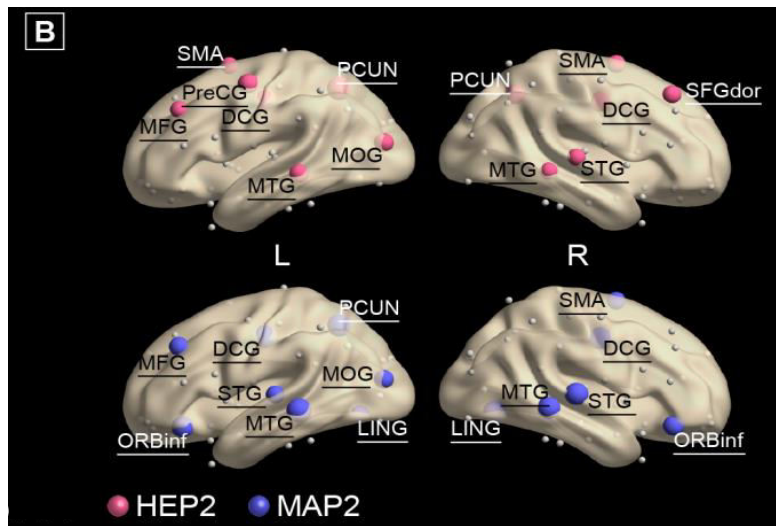
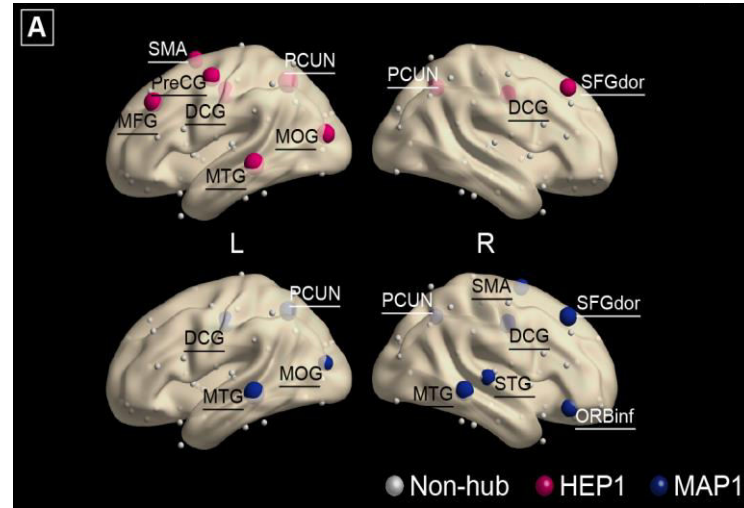
Jurong Ageing Study

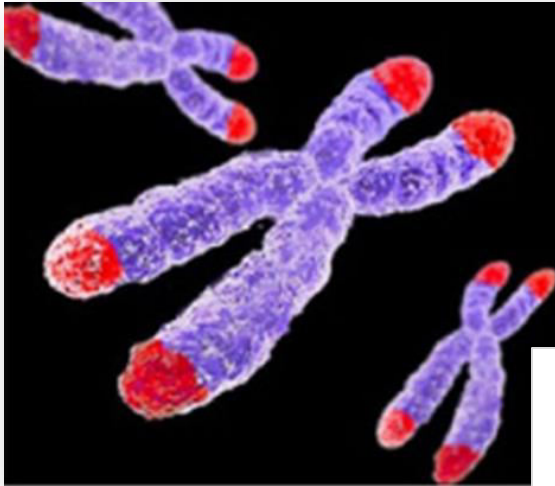
Cognitive change after 1 year



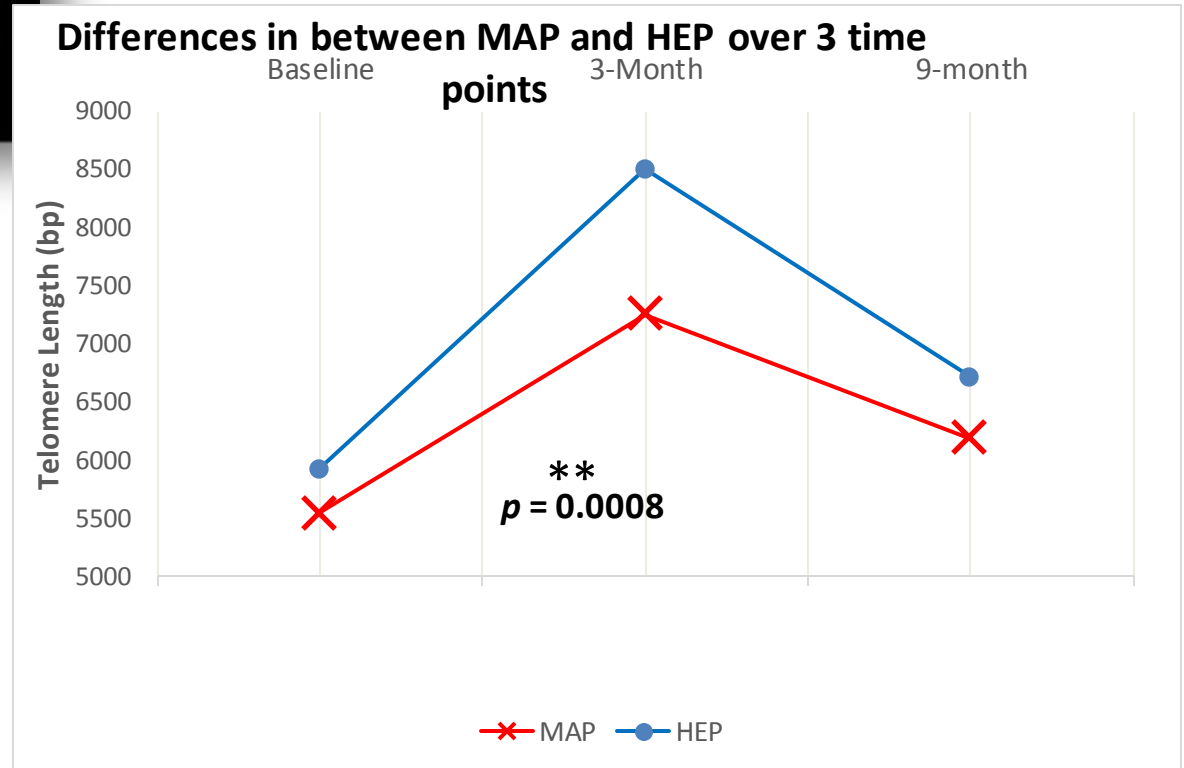
Mindfulness & Brain Connectivity

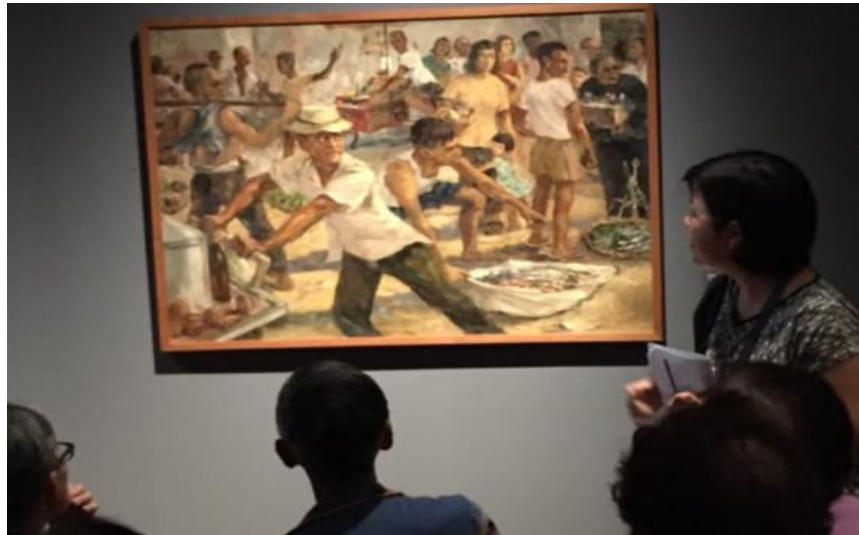
Improved Network Efficiency
Higher Nodal Efficiency





Mindfulness and Telomere Lengths





Art and Music-Reminiscence

Mahendran R, Mihir G, Kua EH, et al. BMC Trials 2018

Ageing-in-Place



Home safety

Intergenerational Care

Voluntarism

Where-there-is-no-Psychiatrist

Changing Behaviour

Changing Values

4-Age Well Everyday (AWE) Programme

1. Structured Program
2. Evidence-based Research
3. Outcome Evaluation



Age Well Everyday (AWE) Programme



KMSPKS



Bishan North



Hougang



Tampines-Changkat



Queenstown



Eunos

Choral Singing and Cognition



Take Home Messages

- Encouraging results are seen in a Singapore community translation programme to prevent dementia and reduce disability.
- The Dementia Prevention Programme (DPP) focus has progressed to Age Well Everyday (AWE) focus.
 - You can do many things to prevent dementia
- Adopt a healthy lifestyle and healthy ageing; adopt an active lifestyle and active ageing
 - Start today

Thank You



The Team

