17年來克爾坦奎亞對大腦益處的醫學研究—克爾坦奎亞的藝術與科學

Kirti Khalsa，阿茲海默症研究預防基金會執行長兼共同創辦人

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我們將探討：

1-阿茲海默症是什麼及其風險因素

2-克爾坦奎亞如何戲劇性地改善大腦功能

3-正在進行的稱為「粉紅腦計畫」(The Pink Brain Project)的研究，瑜伽和冥想如何為高風險女士預防失智症

關於講者：

- 來自義大利羅馬
- 修習昆達里尼瑜伽已有37年
- 對於幫助長者保持健康充滿熱忱
- 扶輪社員

阿茲海默症研究預防基金會(ARPF): 27年來設計並資助開創性的研究工作

- 經由阿茲海默症防治的4大支柱(The 4 Pillars of Alzheimer's Prevention)，致力於**預防**阿茲海默症的研究工作，包括瑜伽 / 冥想和生活方式。
- 革新了傳統的醫學智慧。
- 建立起阿茲海默症是可以預防的疾病的觀念，甚至能有效地予以治療，可以透過保持大腦健康的生活方式加以預防。
- 教育大眾了解這個病症，並知道延緩其發病 / 降低風險因素的方法。

阿茲海默症(Alzheimer's Disease) / 失智症(Dementia)

失智症：醫學舊稱，目前越來越少使用，因為是一種概括診斷的泛稱。現代醫學較為精確，現在醫師會做出不同**種類**的失智症診斷。

阿茲海默症：一種影響大腦的漸進式疾病，**成因不明，無法治癒**。常見症狀包括：

- 喪失記憶力
- 失去方向感
- 難以說出心中所想的詞彙和名字
- 難以從事日常生活的正常活動
- 會影響情緒和個性
- 嚴重時患者生活無法自理

風險因素

1- 年齡
通常是老年人易患的疾病。在台灣，65歲以上每13人會有1人罹患，80歲以上每5人會有1人罹患。

2- 家族病史
如果直系血親中有人患此病，罹患的風險較高。

3- 先天的基因組成
載脂蛋白第4型基因(APOE-4)。

4- 其他疾病：心臟病、中風、 頭部損傷、 糖尿病。

5- 生活方式選擇
你的生活方式影響了大腦的健康。

台灣有關阿茲海默症的驚人統計數字:

- 阿茲海默症患者中有54%是女性，46%是男性。
- 預計2017年失智症將影響到270,000人。

阿茲海默症患者人數正在上升。2011年，65歲以上有320萬人罹患。其中18.36%是輕度認知障礙(MCI)，7.94%是失智症。

- 華裔人士比起歐美人士較少具有APOE4的基因。

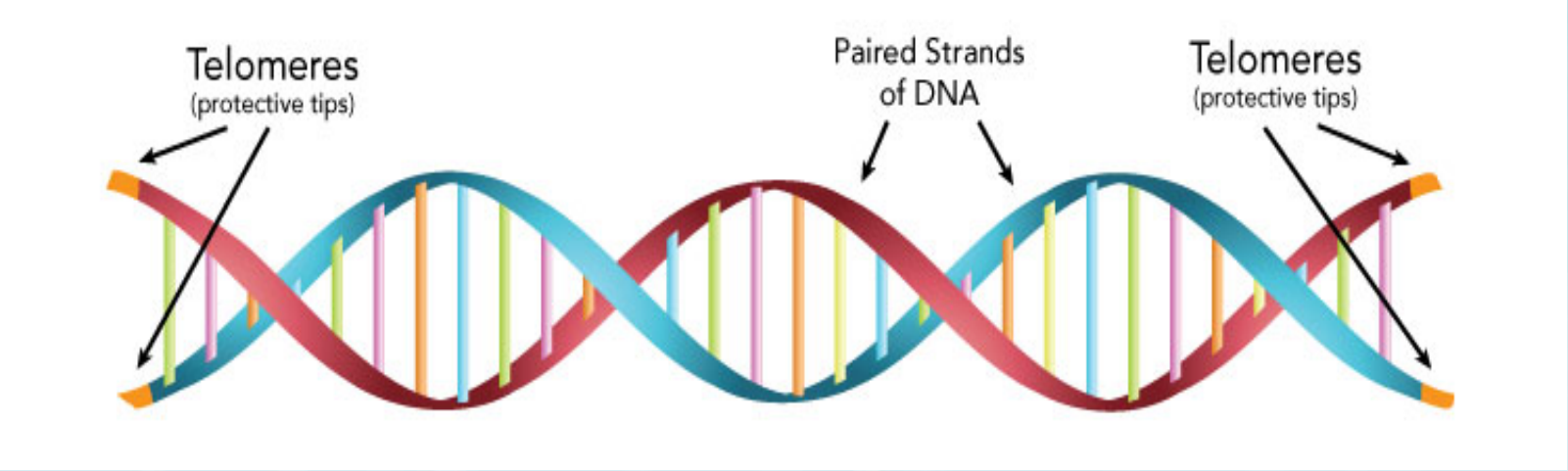
值得欣慰的是：

記憶力喪失並非老化的正常過程。

芬蘭預防認知障礙老年病學介入研究 (Finnish Geriatric Interventional Study for the Prevention of Cognitive Disabilities, FINGER)

- 年齡介於60-77歲的1,200名有失智症風險的人參與研究
- 長達7-10年的追蹤調查
- 介入方法：飲食、體能運動、認知訓練、測量血管風險因素加上對照組的研究
- 研究發現革新了醫學界對阿茲海默症防治的作法
- 阿茲海默症研究預防基金會(ARPF)是贊助和支持此項研究的主要單位之一

選擇不良的生活方式會縮短端粒(Telomeres)而影響基因及DNA



許多已發表的研究揭示了冥想的眾多益處：

增強記憶力、改善細胞的健康和促進基因的健全

（好處多多）

ARPF的研究夥伴

West Virginia University
SCHOOL OF PUBLIC HEALTH

THE UNIVERSITY of NEW MEXICO

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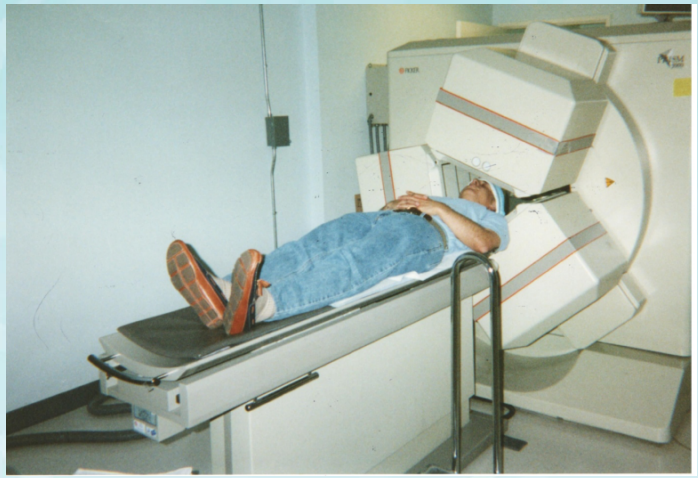
Karolinska Institutet



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Penn Medicine

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Original article

Nuclear Medicine Communications

Cerebral blood flow changes during chanting meditation

Dharma Singh Khalsa[a], Daniel Amen[b], Chris Hanks[a], Nisha Money[c] and Andrew Newberg[d]

Purpose To examine changes in brain physiology during a chanting meditation practice using cerebral blood flow single-photon emission computed tomography.

Methods Single-photon emission computed tomography scans were acquired in 11 healthy individuals during either a resting state or meditation practice randomly performed on two separate days. Statistical parametric mapping analyses were conducted to identify significant changes in regional cerebral blood flow (rCBF) between the two conditions.

function in a way that is consistent with earlier studies of related types of meditation as well as with the positive clinical outcomes anecdotally reported by its users. *Nucl Med Commun* 00:000–000 © 2009 Wolters Kluwer Health | Lippincott Williams & Wilkins.

Nuclear Medicine Communications 2009, 00:000–000

Keywords: cerebral blood flow, meditation, single-photon emission computed tomography

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「唱誦冥想時大腦血流量的變化」，刊載於《核心醫學通訊》

NMC
Nuclear Medicine Communications

Journal of Alzheimer's Disease 20 (2010) 517–526
DOI 10.3233/JAD-2010-1391
IOS Press

Meditation Effects on Cognitive Function and Cerebral Blood Flow In Subjects with Memory Loss: A Preliminary Study

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Accepted 12 January 2010

Abstract. This preliminary study determined if subjects with memory loss problems demonstrate changes in memory and cerebral blood flow (CBF) after a simple 8-week meditation program. Fourteen subjects with memory problems had an IV inserted and were injected with 250MBq of Tc-99m ECD while listening to a neutral stimulus CD. They then underwent a pre-program baseline SPECT scan. Then subjects were guided through their first meditation session with a CD, during which they received an injection of 925MBq ECD, and underwent a pre-program meditation scan. Subjects completed an 8-week meditation program and underwent the same scanning protocol resulting in a post-program baseline and meditation scan. A region of interest (ROI) template obtained counts in each ROI normalized to whole brain to provide a CBF ratio. Baseline and meditation scans and neuropsychological testing were compared before and after the program. The meditation program resulted in significant increases ($p < 0.05$) in baseline CBF ratios in the prefrontal, superior frontal, and superior parietal cortices. Scores on neuropsychological tests of verbal fluency, Trails B, and logical memory showed improvements after training. This preliminary study evaluated whether an 8-week meditation program resulted in improvements in neuropsychological function and differences in CBF in subjects with memory loss. While the findings are encouraging, there are a number of limitations that can be addressed in future studies with more participants and more detailed analyses.

Keywords: Cerebral blood flow, cognitive impairment, meditation, memory, single photon emission computed tomography

「冥想對喪失記憶力患者的認知功能和大腦血流量的影響：初步研究」，刊載於《阿茲海默症期刊》

Consciousness and Cognition 19 (2010) 899–905

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Consciousness and Cognition

journal homepage: www.elsevier.com/locate/concog

Cerebral blood flow differences between long-term meditators and non-meditators

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ABSTRACT

We have studied a number of long-term meditators in previous studies. The purpose of this study was to determine if there are differences in baseline brain function of experienced meditators compared to non-meditators. All subjects were recruited as part of an ongoing

「長期冥想者和不冥想者大腦血流量的差異」，刊載於《意識和認知》

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Effects of an 8-Week Meditation Program on Mood and Anxiety in Patients with Memory Loss

Aleezé Sattar Moss, PhD,[1] Nancy Wintering, MSW,[1] Hannah Roggenkamp, BA,[1] Dharma Singh Khalsa, MD,[2] Mark R. Waldman, BA,[3] Daniel Monti, MD,[1] and Andrew B. Newberg, MD[1]

Abstract

Background: This study assesses changes in mood and anxiety in a cohort of subjects with memory loss who participated in an 8-week *Kirtan Kriya* meditation program. Perceived spirituality also was assessed. Previous reports from this cohort showed changes in cognitive function and cerebral blood flow (CBF). The purpose of this analysis was to assess outcome measures of mood and affect, and also spirituality, and to determine whether or not results correlated with changes in CBF.

Methods: Fifteen (15) subjects (mean age 62±7 years) with memory problems were enrolled in an 8-week meditation program. Before and after the 8-week meditation, subjects were given a battery of neuropsychologic tests as well as measures of mood, anxiety, and spirituality. In addition, they underwent single photon emission computed tomography scans before and after the program. A region-of-interest template obtained counts in several brain structures that could also be compared to the results from the affect and spirituality measures.

Results: The meditation training program resulted in notable improvement trends in mood, anxiety, tension, and fatigue, with some parameters reaching statistical significance. All major trends correlated with changes in CBF. There were nonsignificant trends in spirituality scores that did not correlate with changes in CBF.

Conclusions: An 8-week, 12 minute a day meditation program in patients with memory loss was associated with positive changes in mood, anxiety, and other neuropsychologic parameters, and these changes correlated with changes in CBF. A larger-scale study is needed to confirm these findings and better elucidate mechanisms of change.

「8週的冥想課程對喪失記憶力患者的情緒和焦慮的影響」，刊載於《非傳統和互補性醫學期刊》

Journal of Alzheimer's Disease 48 (2015) 1–12
DOI 10.3233/JAD-142766
IOS Press

Review

Stress, Meditation, and Alzheimer's Disease Prevention: Where The Evidence Stands

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Handling Associate Editor: J. Wesson Ashford

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Abstract. Although meditation is believed to be over five thousand years old, scientific research on it is in its infancy. Mitigating the extensive negative biochemical effects of stress is a superficially discussed target of Alzheimer's disease (AD) prevention, yet may be critically important. This paper reviews lifestyle and stress as possible factors contributing to AD and meditation's

「壓力、冥想和阿茲海默症防治：證據何在」，刊載於《阿茲海默症期刊》

Journal of Alzheimer's Disease 52 (2016) 673–684
DOI 10.3233/JAD-150653
IOS Press

Changes in Neural Connectivity and Memory Following a Yoga Intervention for Older Adults: A Pilot Study

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「老年人接受瑜伽課程後腦神經連結和記憶力的變化：試驗性研究」，刊載於《阿茲海默症期刊》

「冥想和聽音樂對早期喪失記憶力的成年人的壓力、情緒、睡眠和生活品質的影響：試驗性的隨機對照研究」，刊載於《阿茲海默症期刊》

Effects of Meditation versus Music Listening on Perceived Stress, Mood, Sleep, and Quality of Life in Adults with Early Memory Loss: A Pilot Randomized Controlled Trial

Article type: Research Article

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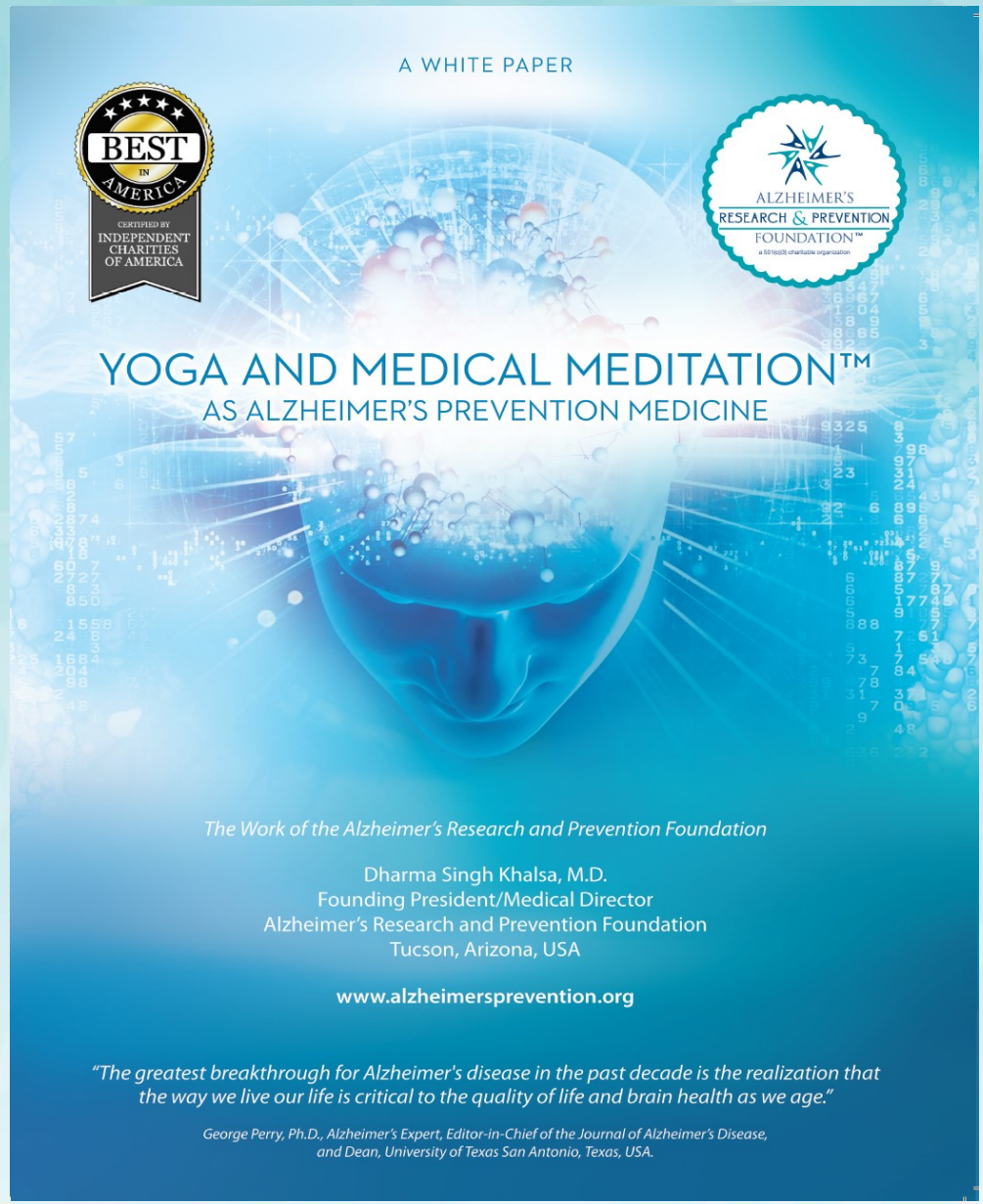

瑜伽和醫學冥想

作為預防阿茲海默症的醫學

白皮書

WHITE PAPER
A publication of the Alzheimer's Research and Prevention Foundation

WP

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HOW KIRTAN KRIYA MEDITATION BENEFITS ADULTS WITH EARLY MEMORY LOSS

FINDINGS FROM A RANDOMIZED CONTROLLED TRIAL

By Professor Kim E. Innes, MSPH, PhD
Scientific Advisory Council Member, Alzheimer's Research and Prevention Foundation

SARAH'S STORY

Sarah was worried.

Over the last 12 months, it seemed that her memory was slipping, and she was having difficulty concentrating.

Formerly known as a productive, organized and detail-oriented employee, she was concerned that her work was suffering. Meeting deadlines was becoming more challenging, and she now found herself often needing to construct reminder lists in order to function. At times she felt overwhelmed by responsibilities she used to enjoy. The other day she completely forgot to attend a regularly scheduled meeting at work, and last week, she forgot to pick up the laundry and several items at the grocery store.

Just last night, she had difficulty recounting the plot of a movie she had just seen. Her husband noted that lately she was seeming more 'distracted' and forgetful than normal, and her children had begun chiding her about repeating stories.

Fearful that her memory was deteriorating, Sarah had also started to become anxious and depressed; increasingly, she had difficulty sleeping. She was afraid her boss or coworkers might notice something awry, and found herself making excuses to her friends. She still went to her Church regularly, but no longer always stayed for the fellowship meal.

Her husband had suggested seeing a doctor, but Sarah was reluctant to seek medical care.

She did not want to receive a diagnosis that she feared would harm her professional and social relationships, and for which she knew there was no effective treatment.

Sarah felt increasingly frightened and alone. She knew all about Alzheimer's disease, an ever more common progressive brain disorder resulting in a loss of memory, reasoning, language skills, and the ability to care for one's self; she had recently witnessed firsthand the slow and painful decline of a fellow church member, who now resided in a nursing home.

1

「克爾坦奎亞冥想對早期喪失記憶力的成年人的益處」，刊載於《阿茲海默症預防研究基金會白皮書》

Benefits of 12 Minutes a Day of Kirtan Kriya

Effects

1. Increased Energetics
2. Improved Epigenetics
3. Increased Synaptic Function
4. Increased Gray Matter Volume
5. Upregulation of Immune Function
6. Reduces Multiple Risk Factors for AD
7. Increased Telomerase/Telomere Length
8. Down Regulation of Inflammatory Genes
9. Increased Cerebral Blood Flow to Significant Brain Areas

Outcomes

1. Less Stress
2. Better Sleep
3. Less Inflammation
4. Increased Well Being
5. Reversal of Memory Loss
6. Increased Spiritual Fitness
7. Enhanced Executive Function
8. Improved Memory in SCD, MCI, early AD
9. Enhanced Mood with Less Anxiety and Depression

每日 12 分鐘的克爾坦奎亞的益處

功效

1. 增進活力
2. 改善表觀遺傳學
3. 促進神經突觸的功能
4. 增加大腦灰質的體積
5. 調升免疫功能
6. 降低阿茲海默症的多重風險因素
7. 增加端粒的長度
8. 調降發炎性基因
9. 增加流至重要腦區的大腦血流量

結果

1. 減少壓力
2. 促進睡眠
3. 減少發炎
4. 促進健康福祉
5. 扭轉記憶衰退
6. 增進精神健全
7. 增強執行功能
8. 改善主觀性認知衰退、輕度認知障礙和早期阿茲海默症患者的記憶力
9. 減低焦慮和沮喪進而改善情緒

最新研究

粉紅腦™計畫：透過瑜伽冥想訓練減低高風險女士罹患阿茲海默症的風險

我們很興奮的想和大家分享一項突破性的研究，是由ARPF資助洛杉磯加州大學進行的，目前該校的精神科學系正在負責這項研究。粉紅腦計畫引發了大量人士的興趣和關注，因此在受試對象的招募上非常成功。

我們的研究包括100位年長的女性（年齡在50歲以上，以及有較高罹患阿茲海默症風險的近更年期和後更年期的年長女性；這些人都有主觀的認知衰退現象和較高的心血管風險因子）。參與實驗的受試者經由隨機分配，或是參加12週的瑜伽冥想（克爾坦奎亞+昆達里尼瑜伽課），或是接受增強記憶力的介入訓練。

結論

1. 規律地練習克爾坦奎亞被證實可降低健康人士罹患失智症的風險

2. 克爾坦奎亞是專業和家庭照護人士練習自我照顧的絕佳工具

把克爾坦奎亞帶回家

1. 現在可以進行自己主導、12分鐘的克爾坦冥想
2. 每個人都適合練習
3. 最佳練習時刻是每日一起床就做
4. 20美元的捐款可獲贈CD和MP3
5. 包含簡單的講解說明
6. 很容易做，大家盡情享受！

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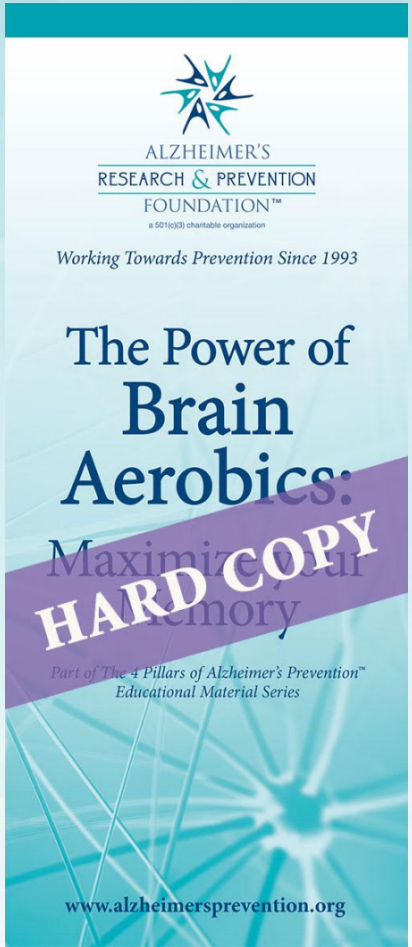

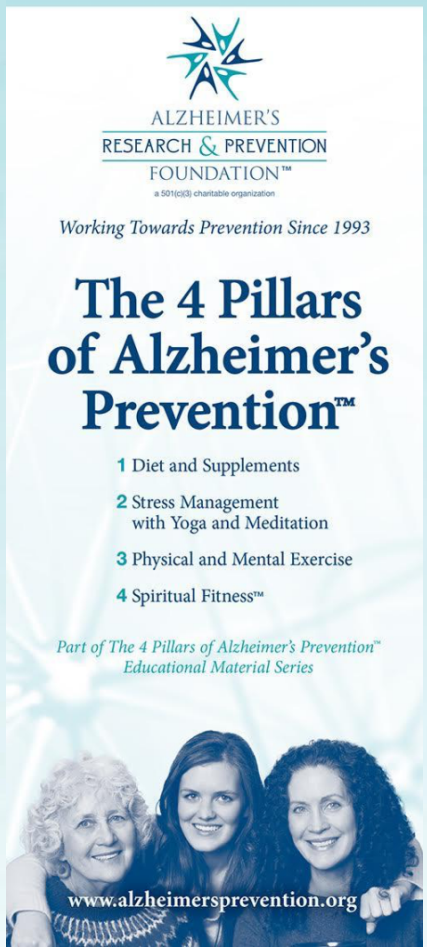

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(IMAGE TO BE INSERTED)

鑒於人口不斷老化，我們急需要以證據為基礎、能協助老年人維持精神上健康靈敏，繼續活躍於社會的生活方式，因此才有**長壽大腦®治療訓練**的構想。

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