



SWEDISH

**HEALTH
FOR
GOOD**

Dementia Prevention Targeting Modifiable Risks

Nancy Isenberg MD MPH

Feb 23rd 2024



Objectives

1. Identify 5 modifiable risk factors for dementia across lifespan
2. Develop strategies to emphasize overlapping risks for heart attack, stroke & dementia
3. Practice MI skills for risk reduction and dementia prevention

Age-Friendly (whole person) Health Systems (AFHS)

Health, novelty, community, purpose, positive mindset

Providence Swedish 5 Ms for Age-Friendly Health

WHAT MATTERS



Know your care preferences and set goals for your health. Establish Advance Directives and Trusted Decision Makers.

MEDICATION



Manage your medications and understand how they may impact your mobility and cognition.

MENTATION



Get the emotional and cognitive support you need. Understand, prevent, and seek treatment for dementia, delirium, and depression.

MOBILITY



Keep active and mobile, preventing injuries and falls. Learn how to safely mobilize as you age.

MALNUTRITION



Commit to proper nutrition and assess malnutrition risk regularly.

Providence  SWEDISH

What is brain health and why is it important?

Yongjun Wang and colleagues discuss the definition of brain health and the opportunities and challenges of future research

A new definition of brain health

Vladimir Hachinski • Abolfazl Avan • Jason Gilliland • Shahram Oveisgharan

Published: May, 2021 • DOI: [https://doi.org/10.1016/S1474-4422\(21\)00102-2](https://doi.org/10.1016/S1474-4422(21)00102-2)

The Brain Health Imperative in the 21st Century—A Call to Action
The AAN Brain Health Platform and Position Statement

Brain health is defined as the state of brain functioning across **cognitive, sensory, social-emotional, behavioral & motor domains** allowing a person to realize their full potential over the life course

More importantly, irrespective of the presence or absence of a disease & seen through the interconnected SDOH

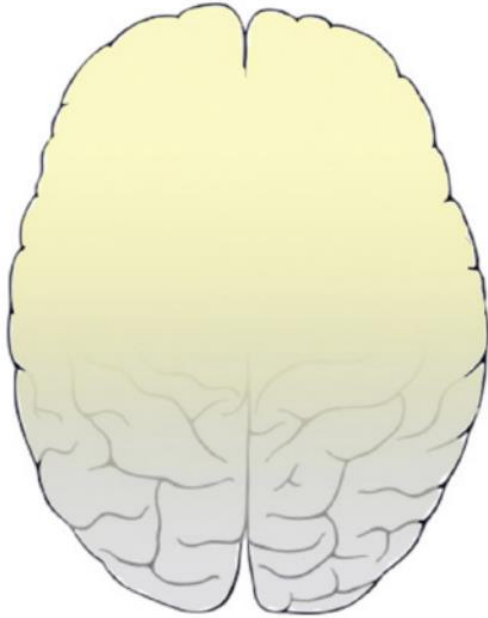
WHO (2021)

EUMENTIA

Optimal cognitive, mental and social function

Promoting factors

Protective factors
Healthy environment



Environmental,
Social,
Political,
Economic,
Individual

Risk factors

Loss of cognitive, mental and social function

DEMENTIA

Neuroepidemiology

40th Anniversary: Review

Neuroepidemiology 2022;56:151–156
DOI: 10.1159/000525219

Received: March 2, 2022
Accepted: May 22, 2022
Published online: May 25, 2022

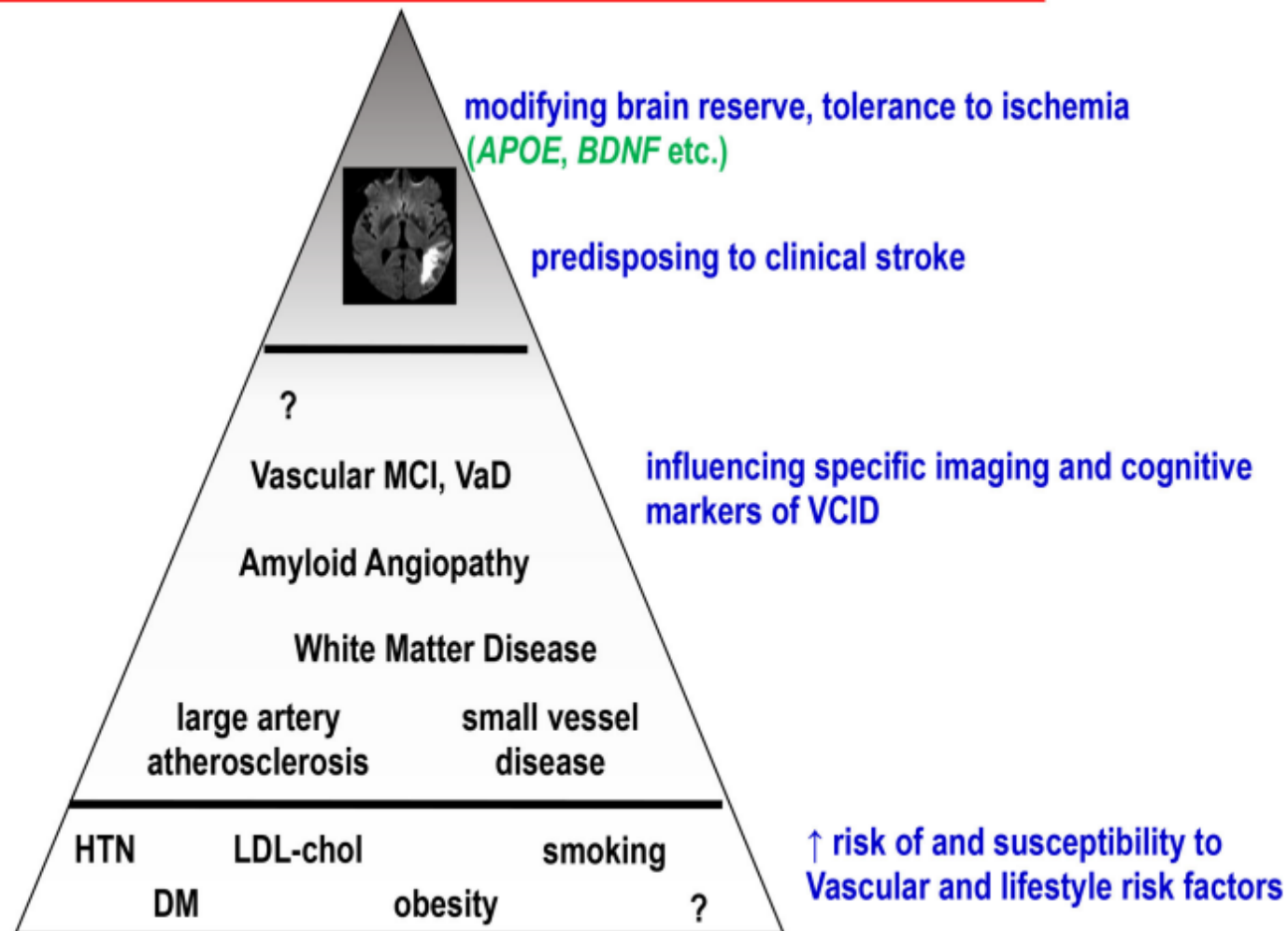
From Dementia to Eumentia: A New Approach to Dementia Prevention

Vladimir Hachinski^{a, b, c} Abolfazl Avan^{d, e}

Comprehensive, customized,
cost-effective approach to prevention
of stroke, heart disease & dementia

Brain health and shared risk factors for dementia and stroke

Hannah Gardener, Clinton B. Wright, Tatjana Rundek and Ralph L. Sacco



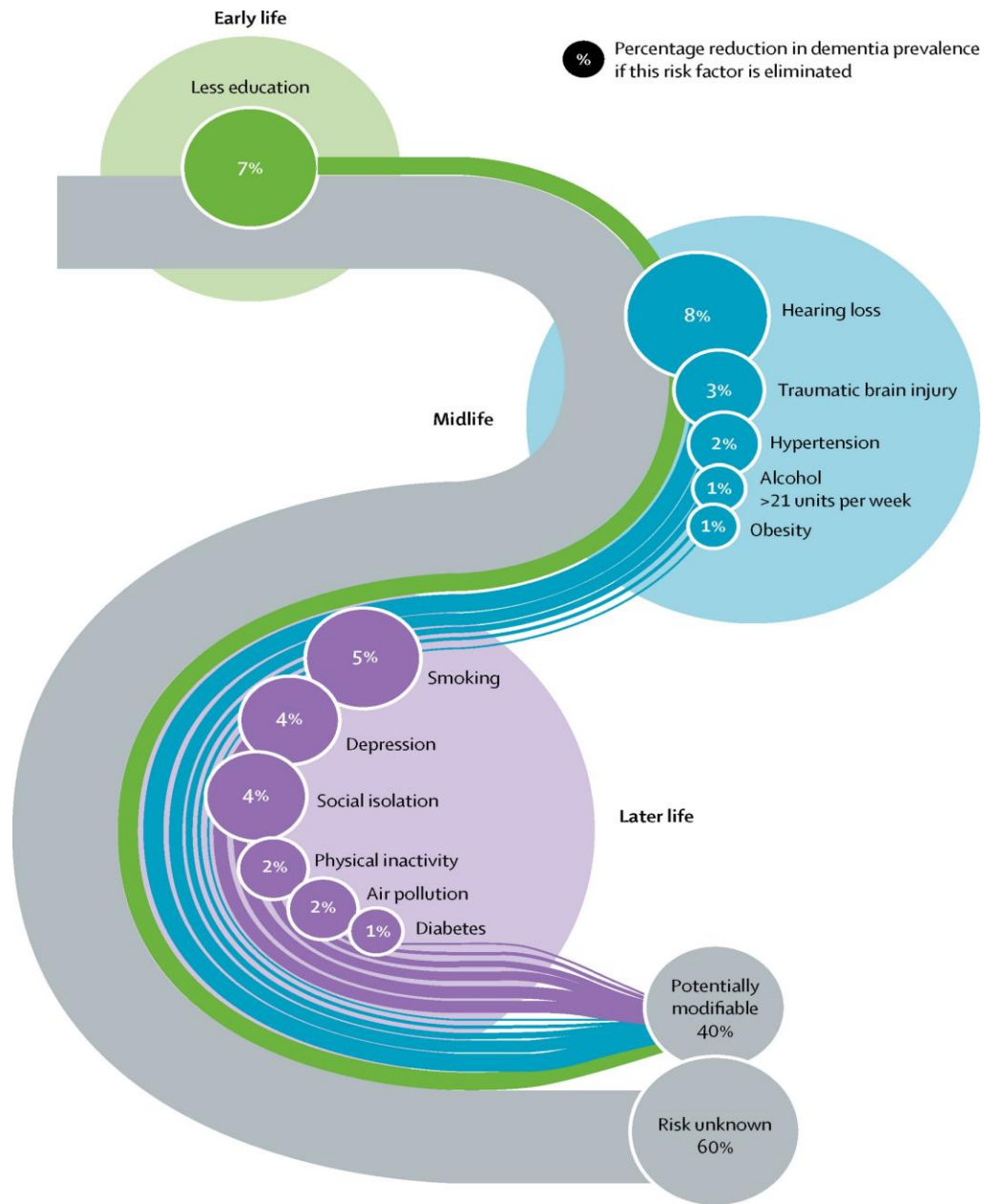
HTN - the most significant of all

1 in 3 of middle-aged adults

1 in 2 by 2025

Feigin VL, Lancet Neurol. 2021

Nat Rev Neurol. 2015 Nov



Risk Factors:

40% of dementia cases are preventable across the lifespan.¹⁶

**Non-modifiable risk factors:
Age, family history, genetics
APOE 4 allele¹⁷⁻¹⁹**

CHRONIC DISEASES IN AMERICA

6 IN 10

Adults in the US
have a chronic disease



4 IN 10

Adults in the US
have two or more

THE LEADING CAUSES OF DEATH AND DISABILITY
and Leading Drivers of the Nation's \$4.1 Trillion in Annual Health Care Costs



Mixed Dementia

- Rule, not the exception
 - 98% of early onset cases with 2 pathologies
 - 100% of late onset cases with 3 pathologies
 - Cerebral amyloid angiopathy = 79-86%
 - Lewy Body disease = 42-49%
 - Differences for amygdala predominant LBD
- Mixed AD and VaD
 - Most frequent form of mixed dementia in late onset
 - 65% vs 39%
 - 28% in dementia clinics
 - >50% in community samples
 - Periventricular lesions in 90% of AD cases



Healthy lifestyle and life expectancy with and without Alzheimer's dementia: population based cohort study

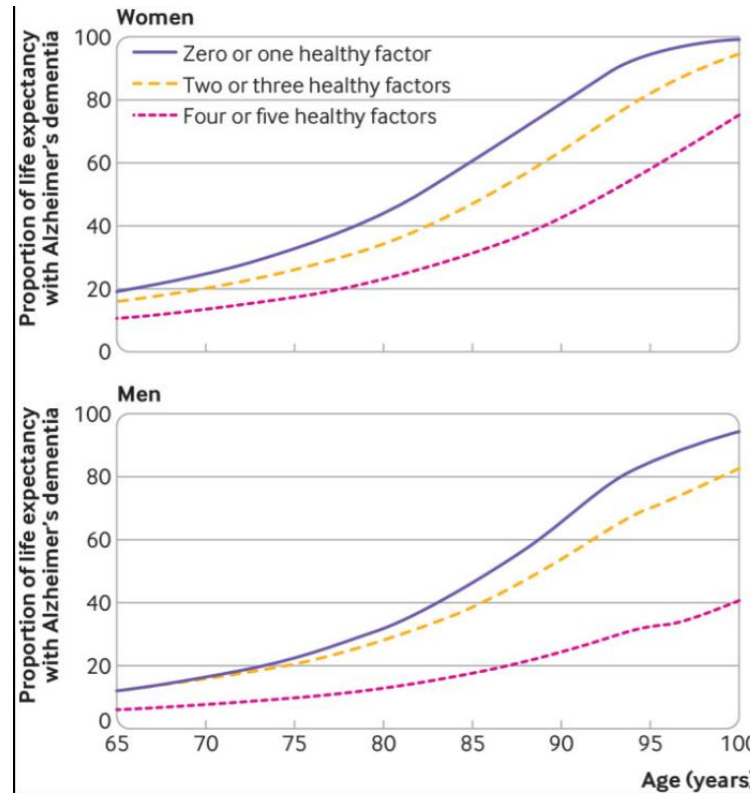
BMJ 2022 ; 377 doi: <https://doi.org/10.1136/bmj-2021-068390> (Published 13 April 2022)

Cite this as: *BMJ* 2022;377:e068390

- Nonsmoking
- ≥ 150 min/wk moderate/vigorous-intensity physical activity
- light to moderate alcohol consumption
- high-quality Mediterranean-DASH Diet Intervention for Neurodegenerative Delay diet (upper 40%)
- Engagement in late-life cognitive activities (upper 40%)

4-5 healthy factors ~60% lower risk of AD

2449 MEN AND WOMEN AGE 65 AND OLDER



See this image and copyright information in PMC

Fig 2 Proportion of life expectancy spent with Alzheimer's dementia according to categories of lifestyle score in women and men. Proportion is computed by dividing life expectancy lived with Alzheimer's dementia by total life expectancy at a given age (supplementary tables 2 and 3). A behavior was classified as low risk or healthy if it met several criteria: Mediterranean-DASH Diet

Review > Ageing Res Rev. 2020 Mar;58:101002. doi: 10.1016/j.arr.2019.101002.

Epub 2019 Dec 30.

A Third of Community-Dwelling Elderly With Intermediate and High Level of Alzheimer's Neuropathologic Changes Are Not Demented: A Meta-Analysis

Mahmoud Reza Azarpazhooh ¹, Abolfazl Avan ², Lauren E Cipriano ³, David G Munoz ⁴, Mahdiyeh Erfanian ⁵, Amin Amiri ⁶, Saverio Stranges ⁷, Vladimir Hachinski ⁸

586 brain autopsies of people who had a mean age of 90.9 years at the time of death, Lifestyle habits linked to dementia risk more than amyloid plaques or abnormal blood flow in their brains.

Participants in this study had registered with RUSH University's Memory and Aging Project. Individuals self-reported their lifestyle habits.

1. Smoking
2. At least 150 min physical activity/wk
3. Limited alcohol
4. MIND diet score
5. Cognitive Activities

The researchers estimated that just 12% of cognition-related measurements were affected by amyloid plaques.

> [JAMA Neurol. 2024 Feb 5:e235491. doi: 10.1001/jamaneurol.2023.5491. Online ahead of print.](#)

Healthy Lifestyle and Cognition in Older Adults With Common Neuropathologies of Dementia

Klodian Dhana ^{1 2}, Puja Agarwal ^{2 3}, Bryan D James ^{2 3}, Sue E Leurgans ^{3 4}, Kumar B Rajan ^{1 2}, Neelum T Aggarwal ^{3 4}, Lisa L Barnes ^{3 4}, David A Bennett ^{3 4}, Julie A Schneider ^{3 4 5}

Healthy lifestyle and the risk of Alzheimer dementia

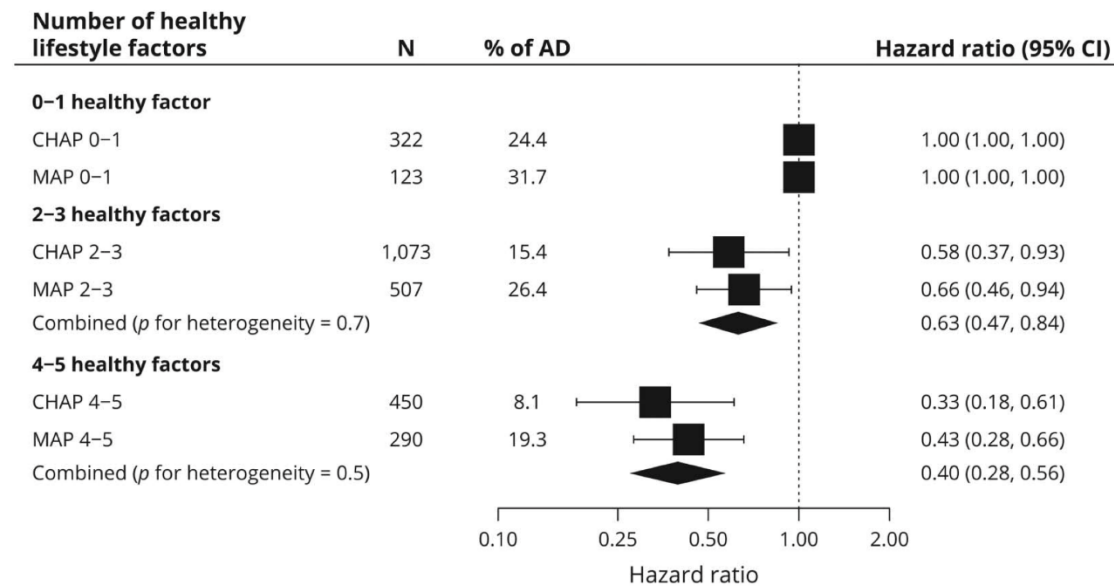
Findings from 2 longitudinal studies

Klodian Dhana, MD, PhD, Denis A. Evans, MD, Kumar B. Rajan, PhD, David A. Bennett, MD, and Martha C. Morris, ScD

Neurology® 2020;95:1-10. doi:10.1212/WNL.00000000000009816

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Dr. Dhana
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Figure HRs of AD according to the combination of healthy lifestyle factors in the prospective cohort studies

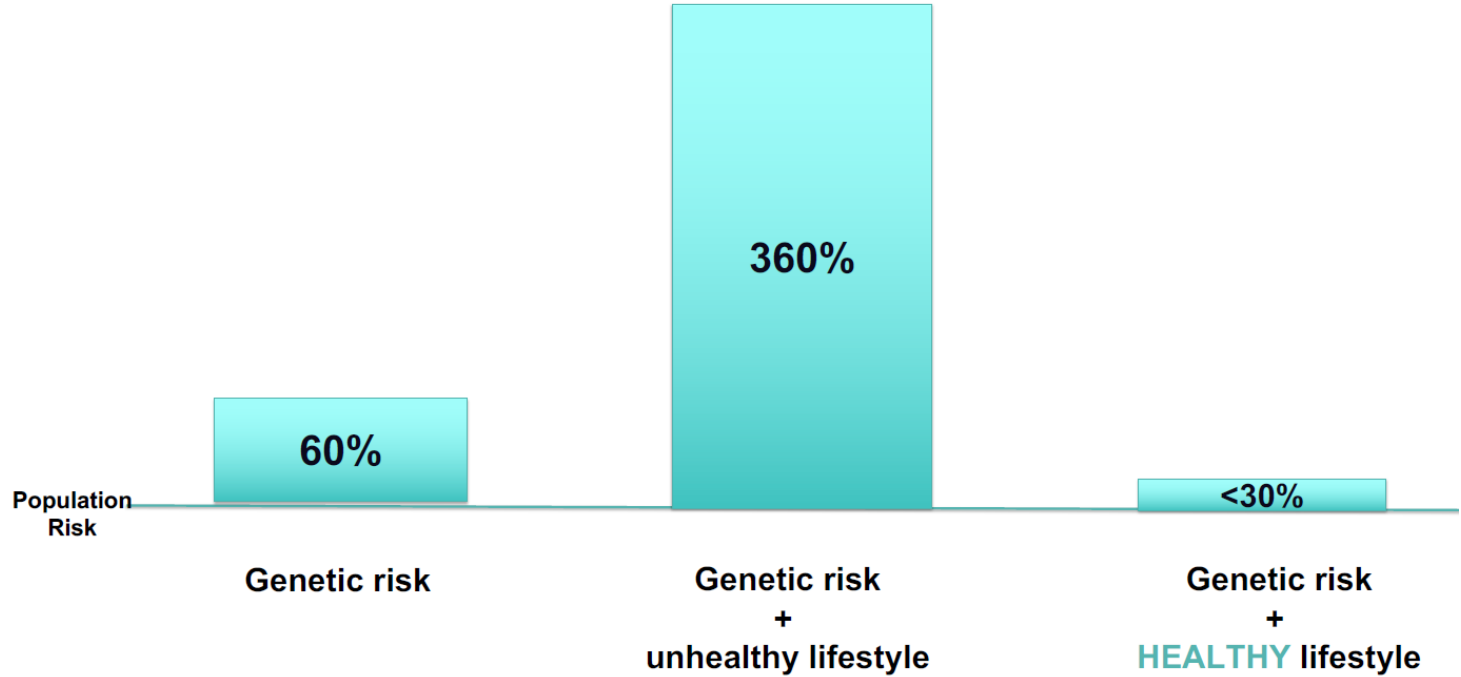


Model adjusted for age, sex, race, education, *APOE* ε4, and prevalence of cardiovascular disease (including heart disease or stroke). A random-effects meta-analysis was used to combine cohort-specific results. AD = Alzheimer dementia; CHAP = Chicago Health and Aging Project; CI = confidence interval; HR = hazard ratio; MAP = Rush Memory and Aging Project; N = number of participants in each group.

Adherence to a healthy lifestyle
can offset genetic risk

Epigenetics

Genetic Risk, Lifestyle and Dementia




Kuzma et al. Alzheimer & Dementia, 2019

The predictive validity of a Brain Care Score for dementia and stroke: data from the UK Biobank cohort

Results: The BCS (median: 12; IQR:11-14) was derived for 398,990 UKB participants (mean age: 57; females: 54%).


5,354 incident cases of dementia, **7,259** incident cases of stroke recorded during a median follow-up of **12.5** years.

A five-point higher BCS at baseline was associated with a **59%** lower risk of dementia among participants aged **<50**. Among those aged **50-59**, the figure was **32%** and **8%** for those aged **>59** years. A five-point higher BCS was associated with a **48%** lower risk of stroke among participants aged **<50**, **52%** among those aged **50-59**, and **33%** among those aged **>59**.



McCANCE

Brain Care Score™



MASSACHUSETTS
GENERAL HOSPITAL

MCCANCE CENTER
FOR BRAIN HEALTH

Category	Criteria / Description	Rank	Score	
Physical	Blood Pressure	Resting blood pressure greater than 140/90, with or without treatment	0	
		Resting blood pressure 120-139/80-89, with or without treatment	2	
		Resting blood pressure less than 120/80	3	
	Blood Sugar	Hemoglobin A1c greater than 6.4	0	
		Hemoglobin A1c between 5.7 and 6.4	1	
		Hemoglobin A1c less than 5.7	2	
	Cholesterol	190 or higher	0	
		No treatment required or less than 190 mg/dL	1	
	BMI	If cardiovascular disease is present, LDL is in accordance to the latest CDC recommendations	1	
		Lower than 18.5 kg/m ²	1	
		18.5-25 kg/m ²	2	
		25-29.9 kg/m ²	1	
Lifestyle	Nutrition	Greater than 30 kg/m ²	0	
		Dietary habits: <ul style="list-style-type: none"> • 4.5 servings of fruit and vegetables per day; • 2 servings of lean protein per day • 3 or more servings of whole grains per day • Less than 1,500 mg of sodium per day • Less than 36 oz of sugar sweet beverages (soda, juice, etc.) per week 		
		Typical weekly diet does not include at least 2 of the recommendations above	0	
		Typical weekly diet includes 2 or more of the recommendations above	1	
		Typical weekly diet includes 3 or more of the recommendations above	2	
	Alcohol	4 or more alcoholic drinks per week	0	
		2-3 alcoholic drinks per week	1	
		0-1 alcoholic drink per week	2	
	Smoking	Current smoker	0	
		Never smoked or quit more than a year ago	3	
	Aerobic Activities	Less than 150 minutes of moderate or 75 minutes of high intensity physical activity per week	0	
	Sleep	At least 150 minutes of moderate physical activity (ex. walking) or 75 minutes of high intensity physical activity per week	1	
Untreated sleep disorder and/or sleeps <7hrs per night		0		
Social Emotional	Stress	Treated sleep disturbances and 7-8 hours of routine sleep per night	1	
		High level of stress that often makes it difficult to function	0	
		Moderate level of stress that occasionally makes it difficult to function	1	
	Social Relationships	Manageable level of stress that rarely makes it difficult to function	2	
		I have few or no close connections other than my spouse or children	0	
	Meaning in Life	I have at least two people, other than my spouse or children, that I feel close with and could talk about private matters or call upon for help	1	
		I often struggle to find value or purpose in my life	0	
	I generally feel that my life has meaning and/or purpose	1		

Lifestyle Medicine for all (DM, CVD, Stroke/VCI)

NUTRITION

3 common diets associated with cognitive & stroke protection: by 30%
DASH, MEDI, MIND

SLEEP HEALTH

<6h or >9h – higher risk
OSA- higher risk by 30%
Prolonged naps
Prolonged Insomnia
Interrupted sleep

SOCIAL CONNECTIONS

Loneliness & social isolation = increased risk of stroke, recurrence, dementia (~40%)



PHYSICAL ACTIVITY

Low PA -20%
Moderate PA ~ 30%
Higher levels of PA-43%
stroke risk reduction, compared to inactivity

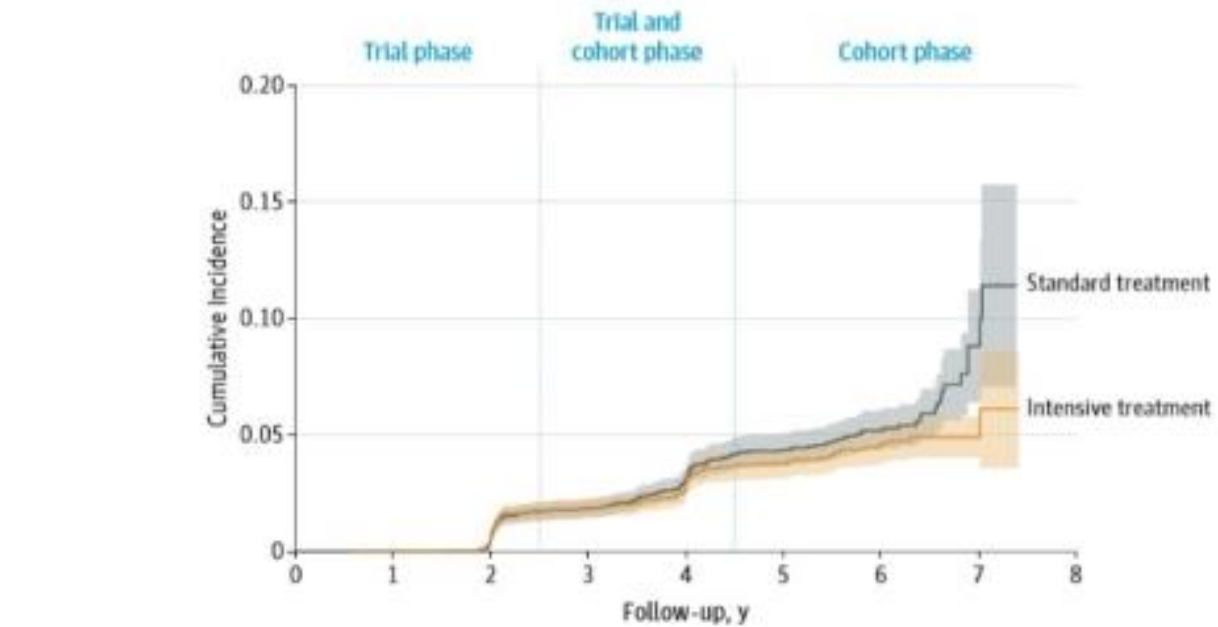
STRESS MANAGEMENT

Stress strongly linked with higher risk of HTN, stroke, cognitive impairment, dementia/AD

SUBSTANCE USE

Middle aged smoking = higher risk of cognitive impairment later in life

Figure 2. Probable Dementia by Treatment Group



No. at risk	0	1	2	3	4	5	6	7	8
Standard treatment	4285	4282	4168	3886	2829	2107	989	87	0
Intensive treatment	4278	4277	4171	3917	2893	2189	1027	93	0

Shaded regions indicate 95% confidence intervals. Median follow-up time was 5.14 years (interquartile range, 3.91-6.00) for the intensive treatment group and 5.07 years (interquartile range, 3.87-5.98) for the standard treatment group. For group comparison of incidence, hazard ratio, 0.83; 95% CI, 0.67-1.04; P=.10.

SPRINT-MIND JAMA 2019

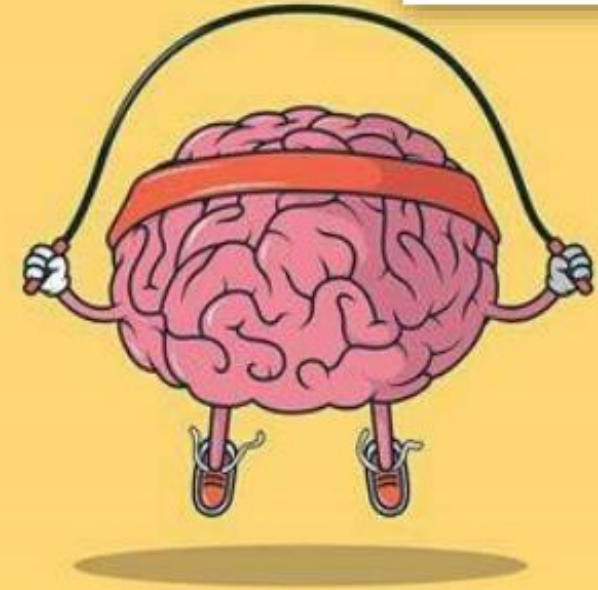
SBP < 120 associated with decreased risk of MCI, fewer white matter lesions, total brain volume and no difference in stroke types based on treatment in subsequent analysis in 2021

PHYSICAL ACTIVITY

P	Physical Activity	S	Stress Resiliency
A	Attitude	T	Time Outs
V	Variety	E	Energy
I	Investigations	P	Purpose
N	Nutrition	S	Sleep
G	Goals	S	Social Connection

Engagement in any type of PA has been shown to reduce stroke risk & the progression of cognitive decline or dementia.

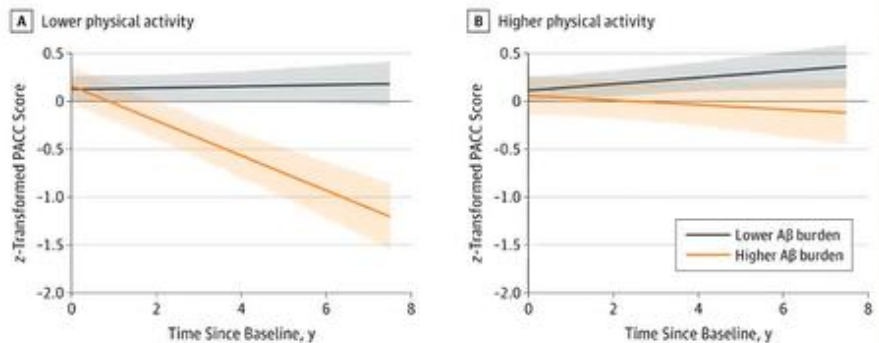
- enhances neuronal connections, maintain neuronal plasticity and improve the release of neurotrophic factors (BDNF - protein that builds the connections & memory)
- A large meta-analysis -
 - ~ 30% less stroke/mortality with moderate to high PA,
 - ~ 20% with leisure-time PA when compared to inactivity.



Similar findings on PA and VCI

Jaqua E, Bidy E, Moore C, Browne G.
The Impact of the Six Pillars of Lifestyle Medicine
on Brain Health. Cureus [Internet]. 2023 Feb 3

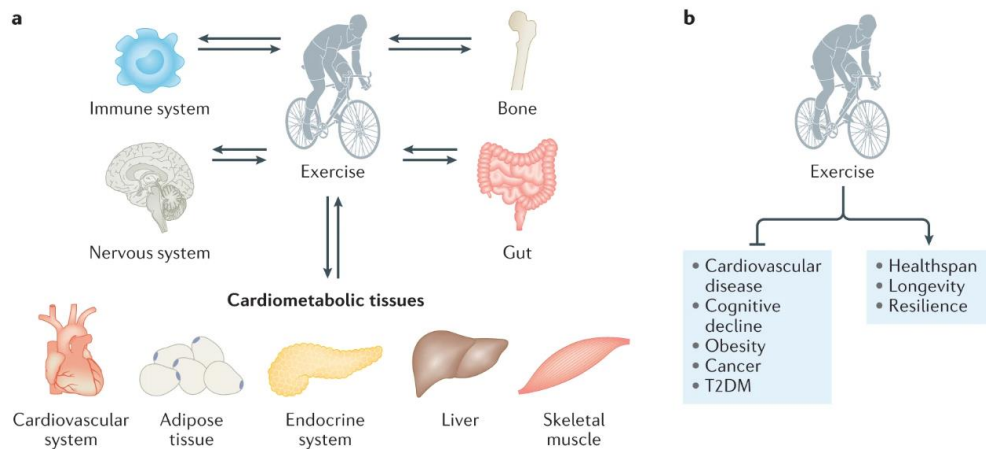
Physical Activity Moderates the Association of Amyloid β with Cognitive Decline



Rabin et al, *JAMA Neurol*, 2019.

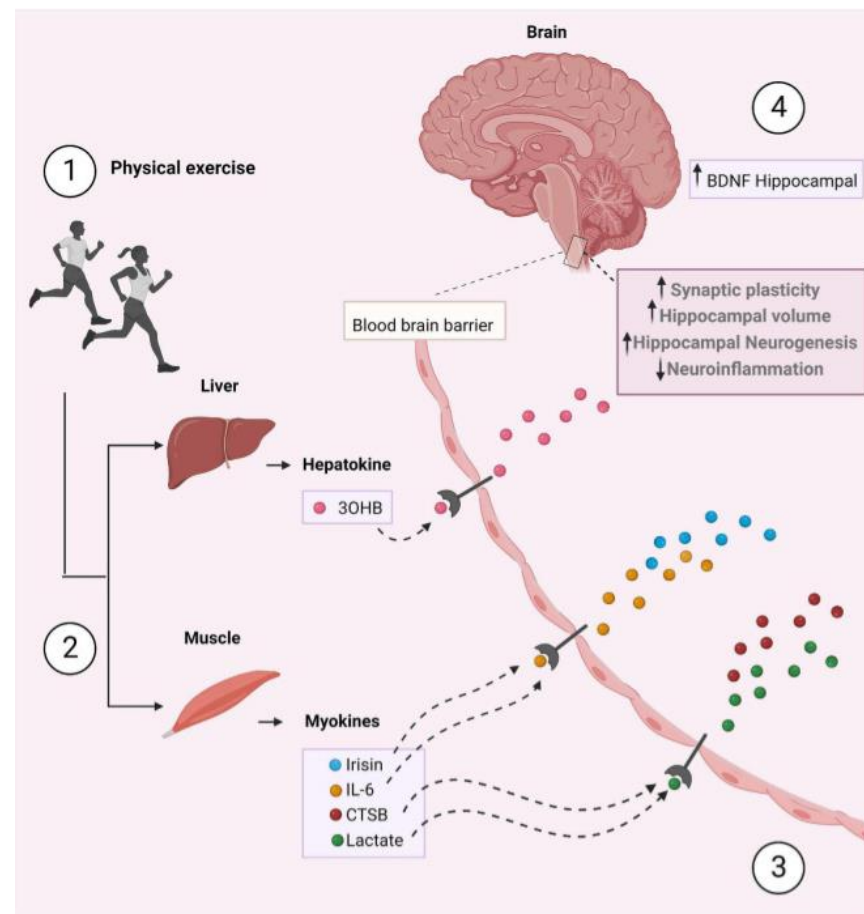
Fig. 1: The systemic effects of exercise.

From: [Exerkines in health, resilience and disease](#)



a | Organs and tissues that can serve as source of exerkines and that are directly affected by exercise. b | Exercise results in profound health benefits, including reductions in the presence or severity of certain diseases, as well as increases in healthspan, longevity and resilience. T2DM, type 2 diabetes mellitus.

Chow et al, *Nature Reviews Endocrinology* 2022



Review > [Front Aging Neurosci.](#) 2022 Aug 31;14:965190. doi: 10.3389/fnagi.2022.965190. eCollection 2022.

The emerging neuroprotective roles of exerkines in Alzheimer's disease

Tayna Rody¹, Julia A De Amorim¹, Fernanda G De Felice^{1 2 3 4}

Exercise and Physical Activity and Dementia

- Over 90 meta-analyses in the last 5 years
- Highest quality/most consistent evidence
- Likely multiple mechanisms of action (Wilckens et al., 2021, Hippocampus)
- Likely beneficial in multiple domains
 - Cognition (processing speed, EF>memory) (Wang et al., 2020, Aging)
 - Physical function/mobility/falls (Lai et al., 2019, AMJ Phys Med Rehabil)
 - Sleep (O’Caoimh et al., 2019)
 - Neuropsychiatric symptoms (Watt, et al, 2021, BMJ)
- Likely most beneficial in combination with other NPTs
- Pooled effects highest for delaying onset>MCI>dementia
 - Group > individual
 - Across settings, including home-based (de Almeida, 2020, Gerontologist)

Exercise and Physical Activity

- Should be recommended to adults with normal cognition to reduce the risk of cognitive decline.
 - Quality of evidence: moderate
 - Strength of the recommendation: strong
- May be recommended to adults with MCI to reduce the risk of cognitive decline.
 - Quality of evidence: low
 - Strength of the recommendation: conditional
- 150 min of moderate-intensity or 75 min vigorous-intensity /week
 - Double for additional health benefits
- Aerobic activity = 10+ minutes' duration
- Poor mobility = balance and fall prevention on 3+ days/week
- Muscle-strengthening = major muscle groups on 2+ days/week
- Limitations = as physically active as abilities and conditions allow

RISK REDUCTION OF COGNITIVE DECLINE AND DEMENTIA

WHO GUIDELINES



How to Implement

Scheduling and structure

Create accountability

Classes

Exercise partner(s)

PT/Trainer

Exercise Diaries

FitBit/exercise trackers

Check in calls

Program for variability and engagement

Graduated, well-paced incremental increases

Motivational interviewing/enhancement-SMART goals

“You know why I want you to exercise, why do you want to?”

“From ‘not at all’ to ‘very,’ how likely are you to _____? What would get you to

Lifestyle Change: Getting started

- Most individuals have multiple lifestyle goals.
- Your agenda and excitement about food, exercise, stress, etc.. is not the most important.
- The patient-driven agenda is paramount.
- Don't ask "What's the Matter with you?"
- Rather: **"What Matters to you?"**

Exercise Snacks

Optional Subhead here

- Small strength training or aerobic exercises throughout the day:
- wall push ups, chair squats, a 5 minute walk
- Small amounts of strength training helps patients build confidence to do more.
- Exercise improves energy, motivation, and mood helping to get the person into a victorious cycle.

> J Neurol Neurosurg Psychiatry. 2022 Apr;93(4):343-350. doi: 10.1136/jnnp-2021-327396. Epub 2021 Dec 21.

Frailty, lifestyle, genetics and dementia risk

David D Ward ^{1 2}, Janice M Ranson ³, Lindsay M K Wallace ^{1 4}, David J Llewellyn ^{3 5}, Kenneth Rockwood ^{6 7 8 9}



Exercise
is Medicine

AMERICAN COLLEGE
of SPORTS MEDICINE

Name: _____ Date: _____

2018 Physical Activity Guidelines for Adults:

- 150-300 minutes/week of moderate-intensity activity or 75-150 minutes/week of vigorous activity (somewhat hard to very hard) or a combination of both
- Muscle strength training 2 or more times a week



Aerobic Activity (check)

Frequency (days/week): 1 2 3 4 5 6 7
Intensity: Light (casual walk) Moderate (brisk walk) Vigorous (like jogging)
Time (minutes/day): 10 20 30 40 50 60 or more
Type: Walk Run Bike Swim/Water Exercise Other _____
Steps/day: 2,500 5,000 7,500 10,000 or more Other _____

What about aerobic activity?

- Moderate activity is at a pace where you can talk but cannot "sing." Examples: *brisk walking, light biking, water exercise and dancing.*
- Vigorous activity is done at a pace where you can't say more than a few words without pausing for a breath. Examples: *jogging, swimming, tennis and fast bicycling.*
- You can exercise for any length of time. For example, you might walk:
 - 30 minutes 5 days/week or
 - 20 minutes daily
 - 5 minutes here, 10 minutes there. Just work your way up to 150 total minutes/week.
- Your ultimate goal is to gradually build up to 7,500-10,000 steps/day.



Muscle Strength Training (check)

Frequency (days/week): 1 2 3 4 5 6 7

What about strength training?

- You don't have to go to a gym. Try elastic bands, do body weight exercises (chair sit-to-stands; floor, wall or kitchen counter push-ups; planks or bridges) or lift dumbbells. Heavy work around your home or yard also builds strength.
- Strengthen your legs, back, chest and arms. To start, try 10-15 repetitions using light effort. Build up to medium or hard effort for 8-12 repetitions. Repeat 2-4 times, 2-3 days/week.
- Give yourself a rest day between each strength training session.

Prescriber's Signature: _____

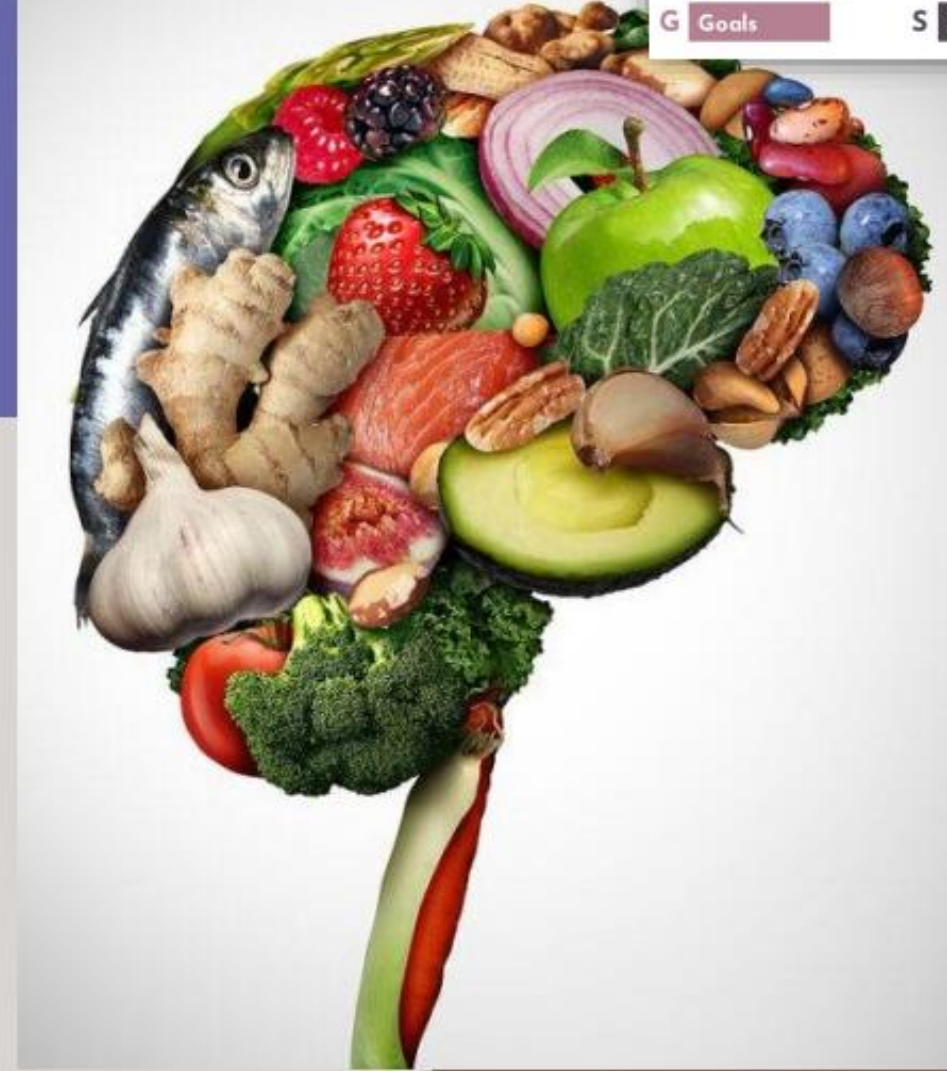
NUTRITION

The most compelling evidence is related to MeDI with increased consumption of food items rich in:

- vitamin E (nuts), acting as an antioxidant,
- fish, - B12 vitamin, - folates
- showing dementia risk reduction of 20-40%

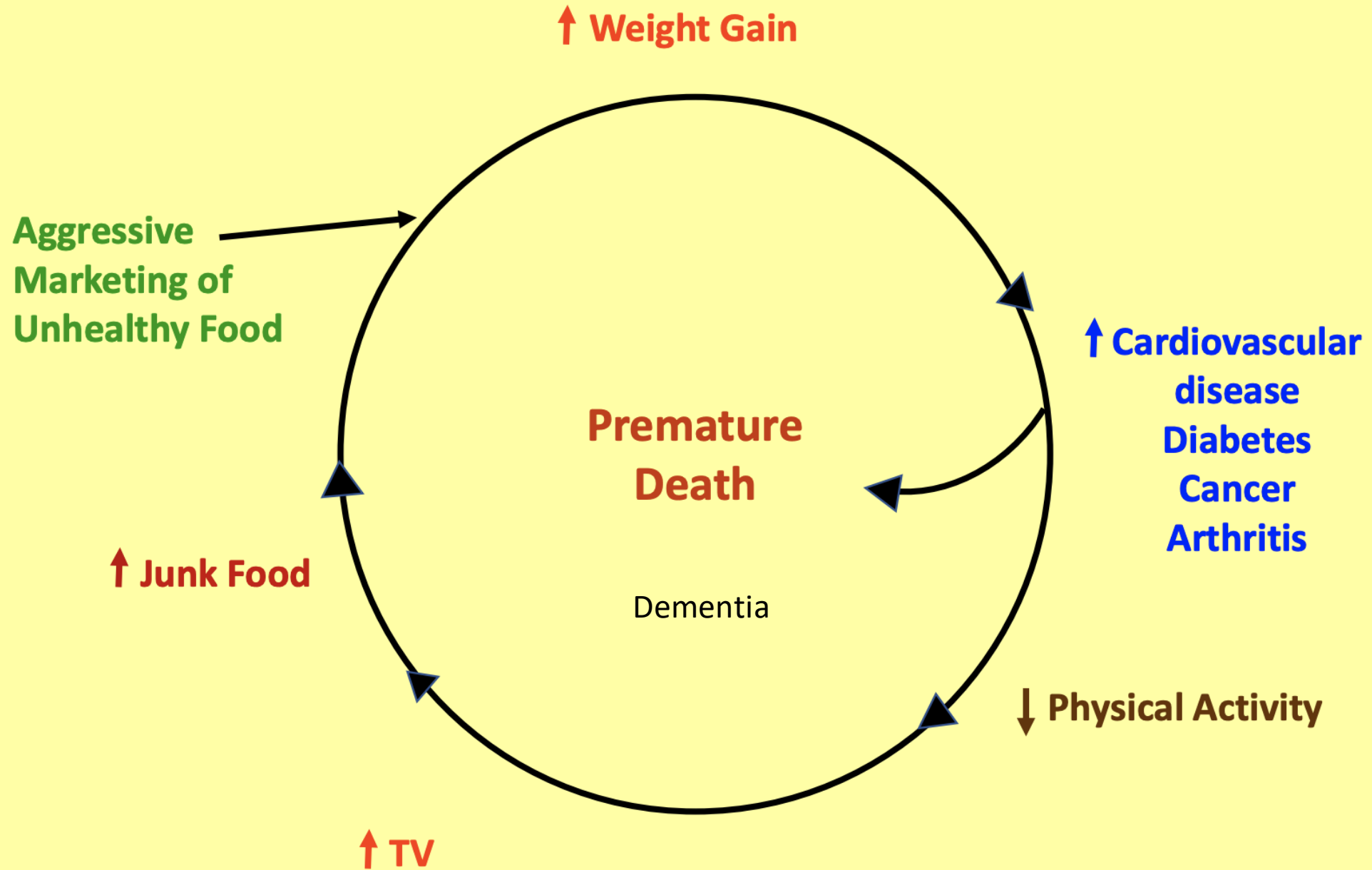
Systematic review of 56 studies (population/RCT),

- higher adherence to all predominantly WFPB dietary patterns
- associated with significantly lower dementia risk ~50%
- even moderate adherence reduced dementia risk by 35%



P	Physical Activity	S	Stress Resilience
A	Attitude	T	Time Outs
V	Variety	E	Energy
I	Investigations	P	Purpose
N	Nutrition	S	Sleep
G	Goals	S	Social Connection

The Overweight/Obesity Spiral



Have plenty of vegetables and fruits

Eat protein foods

Make water your drink of choice

Choose whole grain foods

Discover your food guide at Canada.ca/FoodGuide

Health Canada Santé Canada

HEALTHY EATING PLATE

HEALTHY OILS
Use healthy oils (like olive and canola oil) for cooking, on salad, and at the table. Limit butter. Avoid trans fat.

WATER
Drink water, tea, or coffee (with little or no sugar). Limit milk/dairy (1-2 servings/day) and juice (1 small glass/day). Avoid sugary drinks.

VEGETABLES
The more veggies—and the greater the variety—the better. Potatoes and french fries don't count.

WHOLE GRAINS
Eat whole grains (like brown rice, whole-wheat bread, and whole-grain pasta). Limit refined grains (like white rice and white bread).

FRUITS
Eat plenty of fruits of all colors.

HEALTHY PROTEIN
Choose fish, poultry, beans, and nuts; limit red meat; avoid bacon, cold cuts, and other processed meats.

STAY ACTIVE!
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The Nutrition Source
www.hsph.harvard.edu/nutritionsource

Harvard Medical School
Harvard Health Publications
www.health.harvard.edu

The American Journal of Clinical Nutrition
Available online 18 January 2024
In Press, Corrected Proof | What's this?

Original Research Article
Effect of multivitamin-mineral supplementation versus placebo on cognitive function: results from the clinic subcohort of the COcoa Supplement and Multivitamin Outcomes Study (COSMOS) randomized clinical trial and meta-analysis of 3 cognitive studies within COSMOS

Chirag M Vyas¹, JoAnn E Manson^{2,3,4}, Howard D Sesso^{2,3}, Nancy R Cook^{2,3}, Pamela M Rist^{2,3}, Alison Weinberg², M Vinayaga Moorthy², Laura D Baker^{5,6}, Mark A Espeland^{5,7}, Lok-Kin Yeung⁸, Adam M Brickman^{8,9,10}, Olivia I Okereke^{1,3,4}

Don't Forget **FLAVOR**

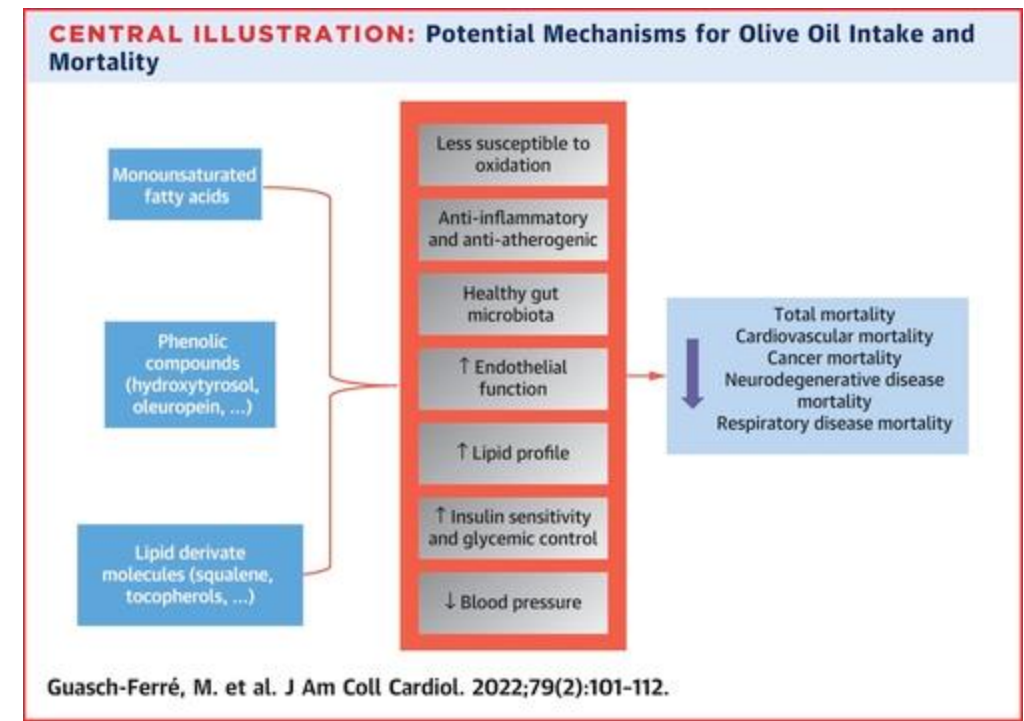
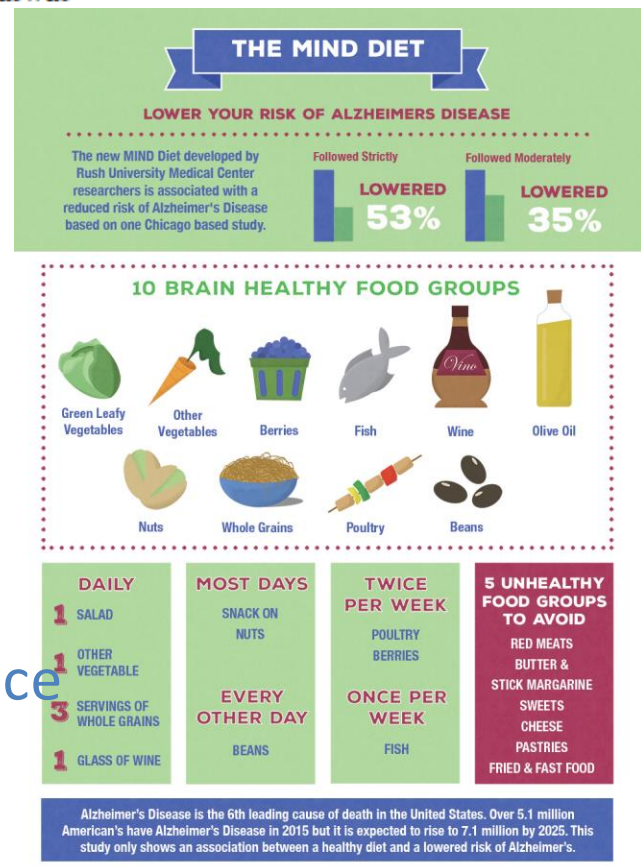
Featured Articles

MIND diet associated with reduced incidence of Alzheimer's disease

Martha Clare Morris^{a,*}, Christy C. Tangney^b, Yamin Wang^a, Frank M. Sacks^c,
David A. Bennett^{d,c}, Neelum T. Aggarwal^{d,c}

[J Alzheimers Dis. 2021; 83\(2\): 683–692.](#)

- N = 923
- Age 58-98
- 4.5 years
- DASH + Mediterranean
 - One glass of wine
- 53% reduction in incidence



RESEARCH SUMMARY

Trial of the MIND Diet for Prevention of Cognitive Decline in Older Persons

Barnes LL et al. DOI: 10.1056/NEJMoa2302368

CLINICAL PROBLEM

Observational studies have suggested that dietary patterns might affect cognitive decline, but clinical findings are limited. Most clinical trials of dietary interventions have focused on cardiovascular health outcomes that might affect the occurrence of dementia, rather than focusing directly on cognitive function.

CLINICAL TRIAL

Design: A two-site, randomized, controlled trial assessed the effects of a 3-year dietary intervention on cognitive decline and brain imaging markers of dementia and Alzheimer's disease in older adults without cognitive impairment but with a family history of dementia.

Intervention: 604 adults ≥65 years of age who were overweight, had suboptimal diets, and had a family history of Alzheimer's dementia were assigned to follow the Mediterranean–DASH Intervention for Neurodegenerative Delay (MIND) diet (a hybrid of the Mediterranean diet and the Dietary Approaches to Stop Hypertension diet) with mild caloric restriction or a control diet with mild caloric restriction for 3 years. All participants received counseling regarding adherence to their assigned diet and support to promote weight loss. The primary end point was the change from baseline in a global cognition score (higher scores indicate better cognitive performance).

RESULTS

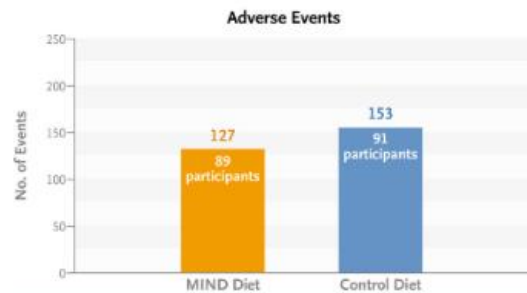
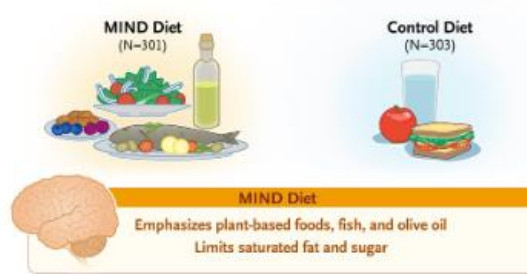
Efficacy: Global cognition scores improved from baseline to year 3 in both the MIND-diet group and the control-diet group but without a significant between-group difference.

Safety: The incidence of adverse events was similar in the two groups. The most common events were cardiovascular and musculoskeletal.

LIMITATIONS AND REMAINING QUESTIONS

Generalizability of the results may be limited by the following features of the trial:

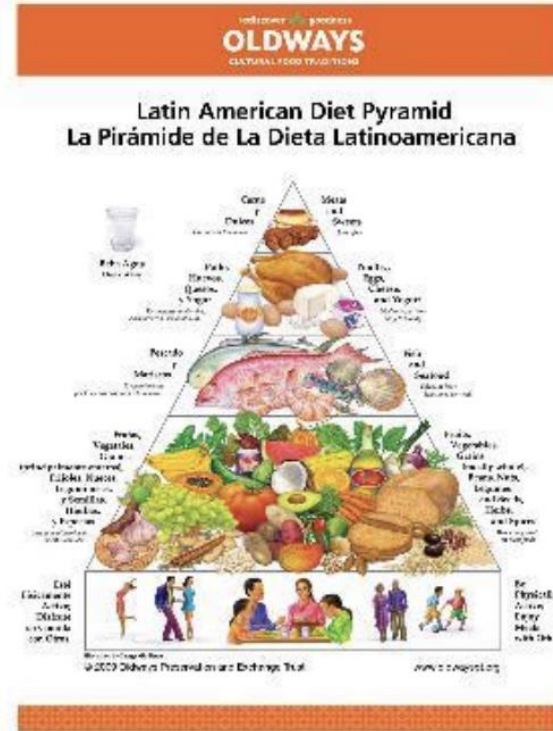
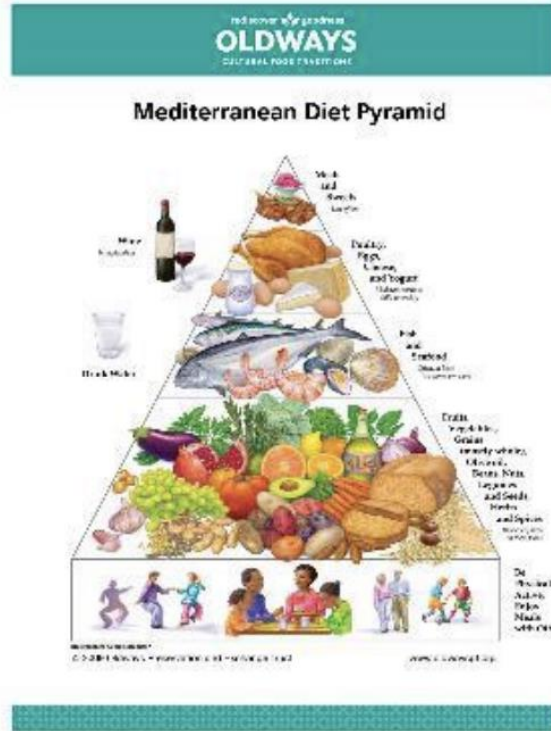
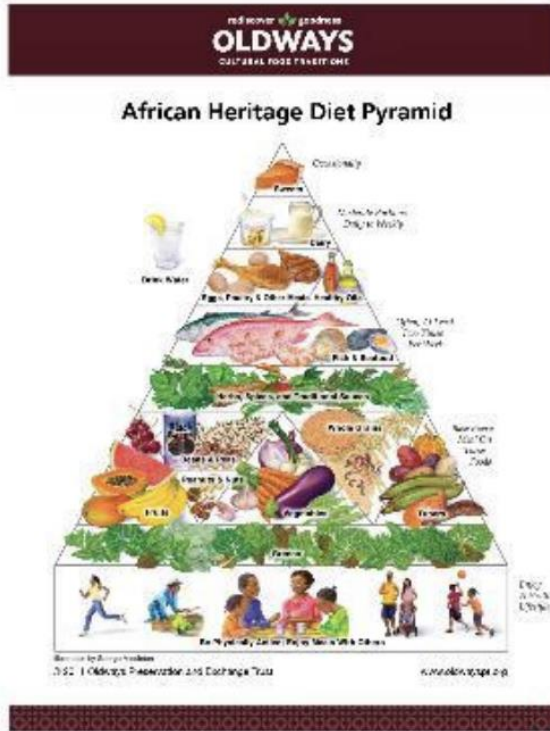
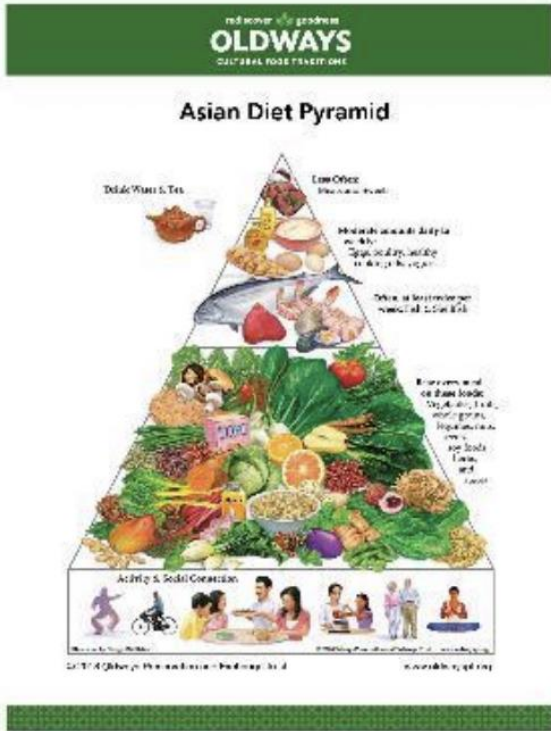
- Participants were required to have a family history of dementia, to have suboptimal diets, and to be overweight.
- Participants were predominantly well-educated, older adults of European descent.



CONCLUSIONS

Among older adults without cognitive impairment but with a family history of dementia, cognitive function at 3 years did not differ significantly between those who followed the MIND diet and those who followed a control diet with a mild caloric restriction.

A Variety of Traditional Diets





Mediterranean Diet increases life expectancy

Greatest gains in young adults- can add up to 13 years

At age 60 can add 8+ years

At age 80 can add 3.5 years

Largest gains from: more legumes, whole grains and nuts, and less red and processed meat

Fadnes LT, Økland J-M, Haaland ØA, Johansson KA (2022)

PLoS Med 19(2): e1003889

How to Implement

Assess needs/preferences/willingness of others

Especially the grocery shopper

Referral to dietician/nutritionist/ vSMA *delish*

Consider incremental changes

Harm reduction model

Pre-packaged meals

Consider different textures, spices, plate to food contrast

Importance of routines, consistent table settings

Consider involving company or family

<https://oldwayspt.org/recipes>

<https://www.gaplesinstitute.org/>

Cognitive Training and Stimulation

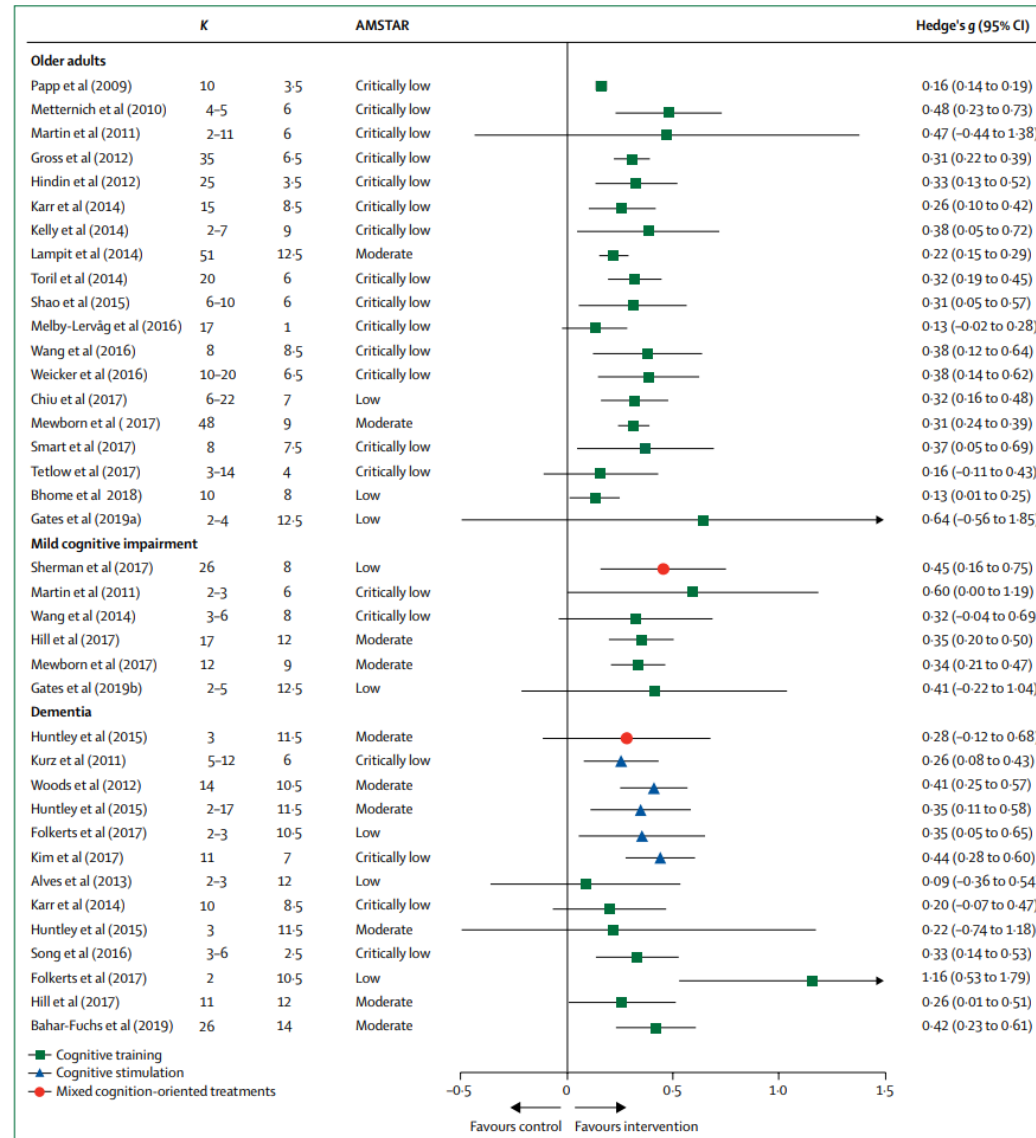


Figure 3: Pooled results of meta-analyses investigating objective cognitive outcomes of cognition-oriented treatment in older adults with and without cognitive impairment
 K represents the number of primary trials included in the analysis. If a review reported several effect sizes within each outcome domain, a composite was created and k denotes the range of the number of primary trials that contributed to the effect estimate.
 AMSTAR=A MeaSurement Tool to Assess systematic Reviews (max score 16).
 Adapted from Gavelin et al.,⁵¹ by permission of Springer Nature.

How to Implement: LIFELONG LEARNING

Engaging in a variety of activities that challenge memory, language, spatial reasoning, attention, etc.

Tasks emphasizing processing speed may most helpful (Rebok et al, 2014, JAGS)

The difficulty should be adjustable to gently but consistently push your skills (without being too frustrating or discouraging)

Activities done as a group or with a partner

Activities that involve new learning (i.e., a new card game, language, instrument, lecture series)

At least a hour a day of things that keep your mind active, like reading, socializing, games

Some pre-packaged, computerized programs include:

Posit Science / Brain HQ - <https://www.brainhq.com/>

Lumosity - <https://www.lumosity.com/>

Providence  SWEDISH
AARP Brain Games - <https://stayingsharp.aarp.org/about/brain-health/games/>

A Comparison of Two LDL Cholesterol Targets after Ischemic Stroke

Pierre Amarenco, M.D., Jong S. Kim, M.D., Julien Labreuche, B.S.T., Hugo Charles, B.S.T., Jérémie Abtan, M.D., Yannick Béjot, M.D., Lucie Cabrejo, M.D., Jae-Kwan Cha, M.D., Grégory Ducrocq, M.D., Ph.D., Maurice Giroud, M.D., Celine Guidoux, M.D., Cristina Hobeau, M.D., *et al.*, for the Treat Stroke to Target Investigators^{*}

Article **Figures/Media**

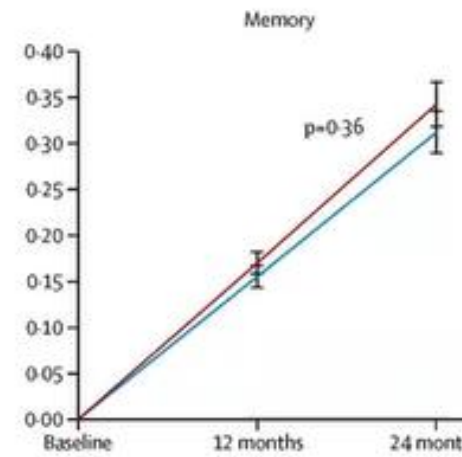
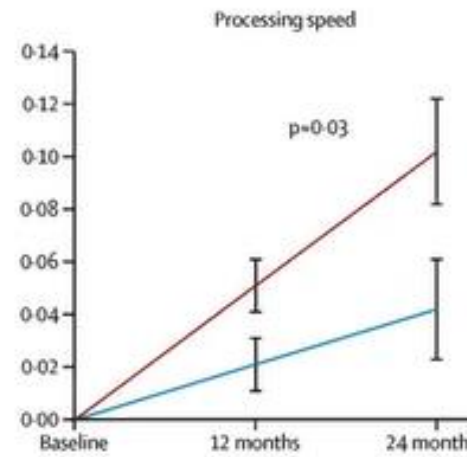
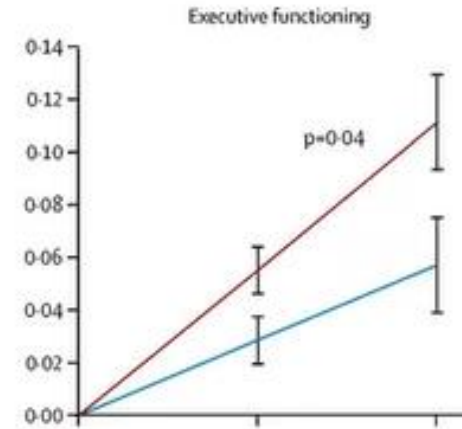
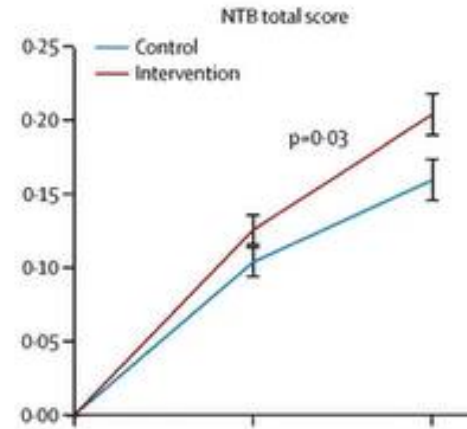
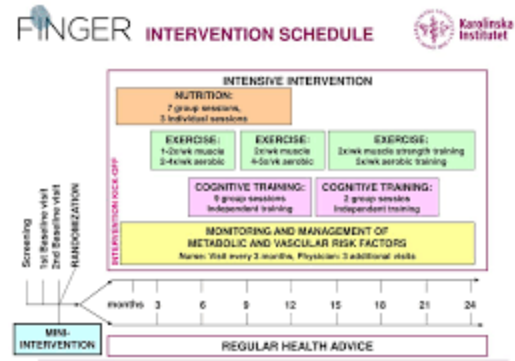
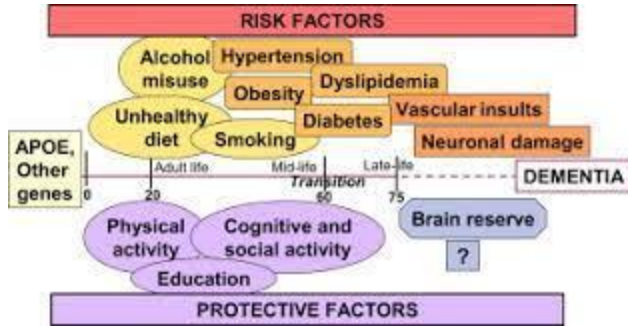
Metrics

January 2, 2020

N Engl J Med 2020; 382:9-19



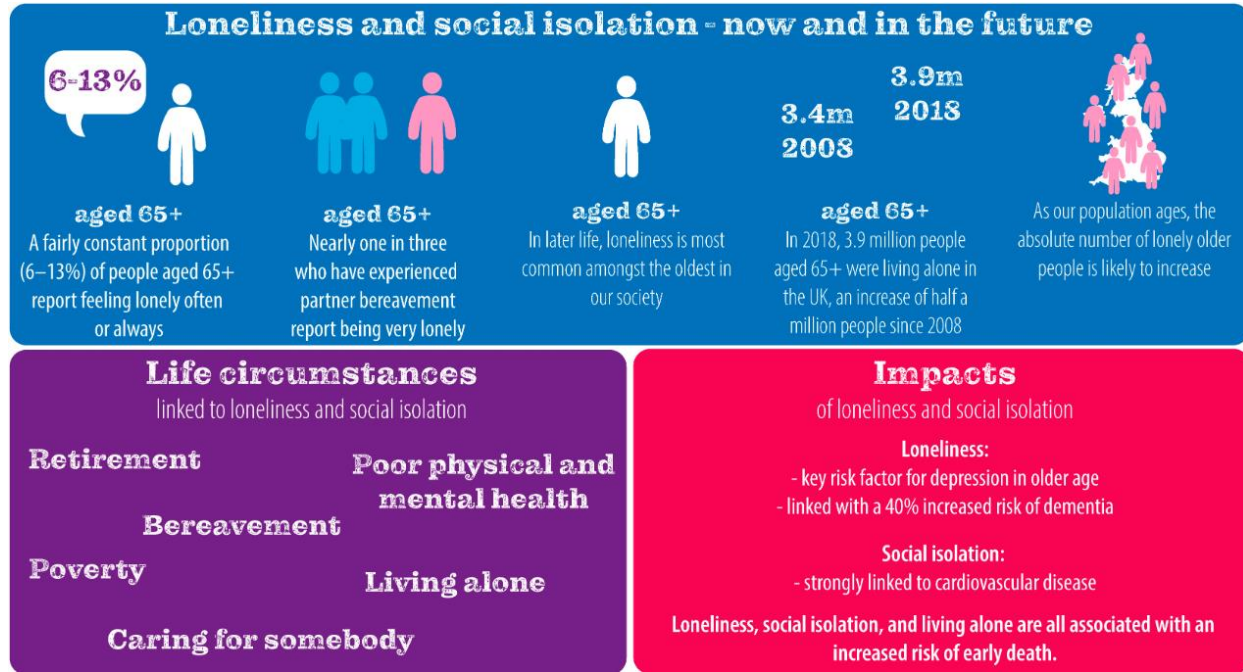
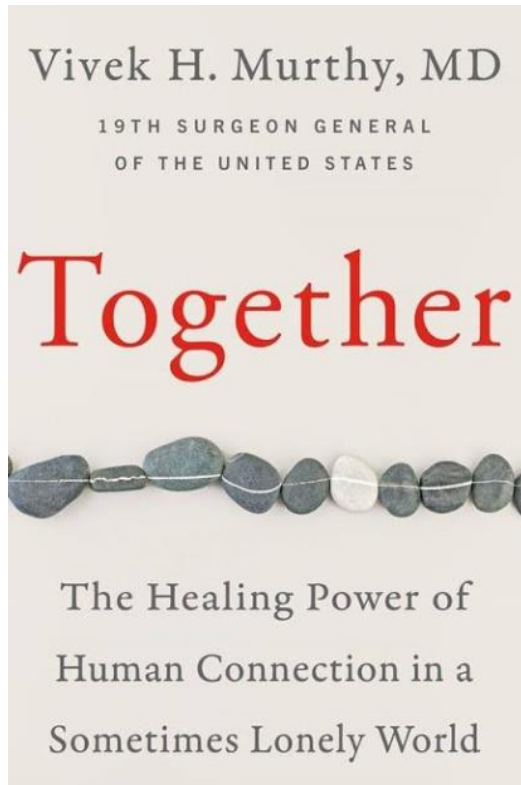
Multidomain Interventions FINGER study



A combination of lifestyle interventions prevents or slows down cognitive decline

Cognitive Checklist/Plan

- ❑ **Labs:** B12 + TSH, routine studies
- ❑ **Screen questions:** EtOH + depression
- ❑ **Meds:** Benzos, Ambien, oxybutynin, benadryl
- ❑ **Other:** Sleep apnea + hearing loss/cataracts/sensory challenges
- ❑ **Imaging:** MRI with hippocampal volumes (**dx MCI**)



➤ [Neurology](https://doi.org/10.1212/WNL.0000000000200583). 2022 Jul 11;99(2):e164-e175. doi: 10.1212/WNL.0000000000200583.

Associations of Social Isolation and Loneliness With Later Dementia

Chun Shen¹, Edmund T Rolls¹, Wei Cheng¹, Jujiao Kang¹, Guiying Dong¹, Chao Xie¹, Xing-Ming Zhao¹, Barbara J Sahakian¹, Jianfeng Feng²

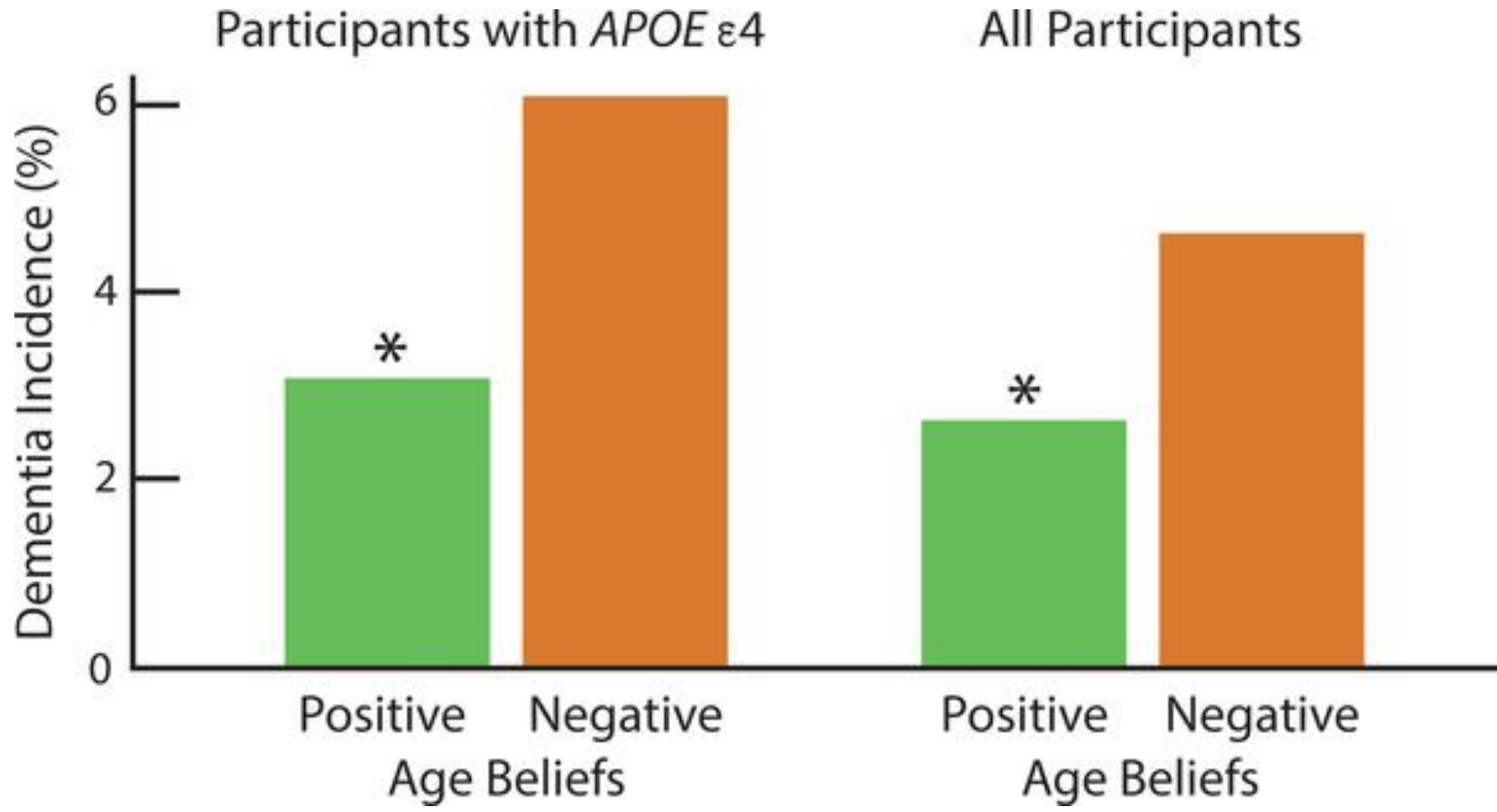


Fig 1. Positive age beliefs associated with reduced dementia among participants with APOE ε4 and all participants.

Levy BR, Slade MD, Pietrzak RH, Ferrucci L (2018) Positive age beliefs protect against dementia even among elders with high-risk gene. PLOS ONE 13(2): e0191004. <https://doi.org/10.1371/journal.pone.0191004> <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0191004>

Breaking the Age Code by B Levy PhD

MBI's and Gene Expression

- MBIs --Mindfulness, Yoga, Tai Chi, Qigong, relaxation response, and breath regulation
- Reduced signalling of **NF-kb** – key transcription factor that leads to stress related gene expression for inflammation



[Thich Nhat Hanh Center for Mindfulness in Public Health
\(mindfulpublichealth.org\)](http://mindfulpublichealth.org)

Bower & Irwin, 2016, N = 26 trials)

Buric et al, 2017, N = 18 trials

Finding Your Mission, Aspiration, Purpose (MAP)

- **Mission:** An important goal accompanied by strong conviction
- **Aspiration:** A strong desire, longing, or aim
- **Purpose:** The reason why something exists, is done, is made, or is used

MAP

- What matters most in life
- Your priorities in life
- Your vision of your optimal life and health



Having a purpose **improves our health**

[Strechter, 2016 – summary of literature](#)

The Most Important Questions for Change

- Is it worth it?



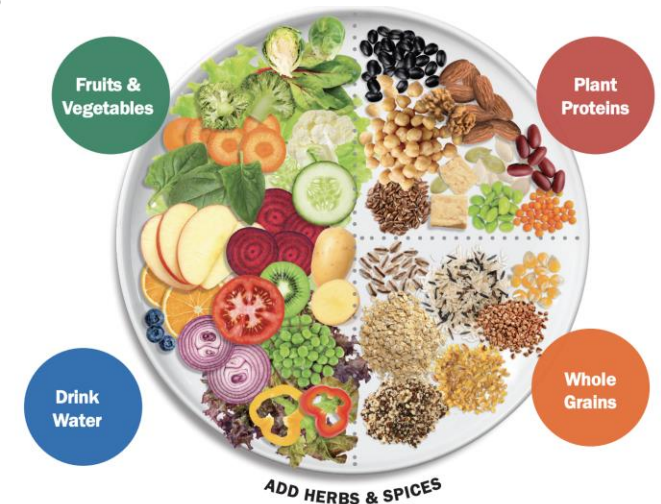
- Can I do it?



Brain Health Rx



- ❑ **Medications:** deprescribe/avoid sedating and anticholinergic.
- ❑ **Contributing Conditions:** Sleep apnea, hearing loss, poor vision, depression, frailty.
- ❑ **Exercise:** >150 min/week aerobic & strength training twice/week.
- ❑ **Stress Resilience/Mindfulness**-try HealthyMinds <https://hminnovations.org/meditation-app>
- ❑ **Cognitive & Social engagement**
- ❑ **Nutrition** Mediterranean/ MIND/ WFPF
- ❑ **Alcohol:** Limiting 0-1 drinks, no smoking/drugs
- ❑ **Blood pressure** SBP <120
- ❑ **Lipids** LDL <70 if prior TIA or stroke
- ❑ **Blood Sugar** A1c < 5.6 w/o DM, <7 w/ DM2



IHC Whole Person Care Grant

As part of the vSMA, patients will receive ingredients to cook along with the nutritionist during the vSMA appointment as part of TKC.



Resources/references:

<https://www.nia.nih.gov/health/exercise-physical-activity>

<https://www.youtube.com/playlist?list=PLmk21KJuZUM4HTrJ7hrJ8yxhToKkJT8a8>

[https://www.thelancet.com/article/S0140-6736\(20\)30367-6/fulltext](https://www.thelancet.com/article/S0140-6736(20)30367-6/fulltext)

<https://n.neurology.org/content/95/4/e374>

Thank you for your attention!



S stands for 7-8 hours sleep, which serves to clear away Alzheimer's pathology.

H is for handling stress, for example, with a meditation practice, movement.

I is for interaction with friends. Loneliness doubles risk for Alzheimer's.

E is for exercise, which induces new nerve cell growth to strengthen brain regions affected in Alzheimer's disease.

L is for learning new things, which increases the number of synapses in your brain, the connections between nerve cells storing your memories. Synapse loss correlates most with the degree of dementia. The more synapses you make, the more you have to spare.

D is for diet. The best diet for the brain is the WFPF diet, which minimizes red meat and is rich in fiber from fruit and vegetables that strengthens bacteria in your gut, or your gut microbiome. A healthy gut microbiome has also been shown to reduce brain neuroinflammation, the biggest killer of nerve cells in the brain.

Questions?

Contact Information

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Nancy.Isenberg@Swedish.org

<https://www.swedish.org/locations/center-for-healthy-aging>

You start dying slowly
if you do not travel,
if you do not read,
If you do not listen to the sounds of life,
If you do not appreciate yourself.

You start dying slowly
When you kill your self-esteem;
When you do not let others help you.

You start dying slowly
If you become a slave of your habits,
Walking everyday on the same paths...
If you do not change your routine,
If you do not wear different colours
Or you do not speak to those you don't know.

You start dying slowly
If you avoid to feel passion
And their turbulent emotions;
Those which make your eyes glisten
And your heart beat fast.

You start dying slowly
If you do not change your life when you are not satisfied with your job, or with your love,
If you do not risk what is safe for the uncertain,
If you do not go after a dream,
If you do not allow yourself,
At least once in your lifetime,
To run away from sensible advice...

Start living today
Run risks today
Do something today
Do not allow yourself to start dying slowly
Do not forget to be happy"

Author: Pablo Neruda - Nobel Prize Winner 1971