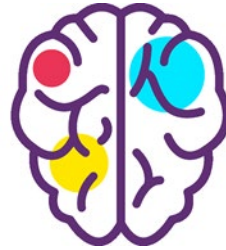


## The Do's and Don'ts of Healthy Brain Aging



Martin Sliwinski, PhD

Gregory Wolf Professor of Aging Studies

Professor of Human Development & Family Studies



**PennState**

College of Health and  
Human Development

Center for Healthy Aging

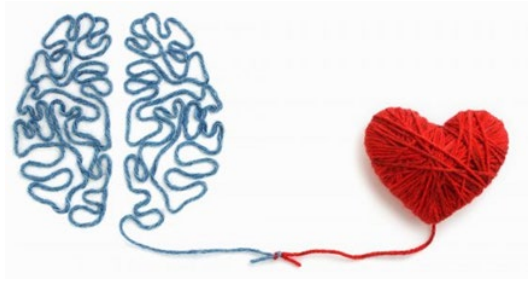
# The Center for Healthy Aging

([healthyaging.psu.edu](http://healthyaging.psu.edu))

Scholarship that promotes lifelong health and well-being



# Today's Goals



Current Trends in Brain Health (bad news/good news)



2 brain health strategies that I prefer  
(paper and pen for a check-up later!)



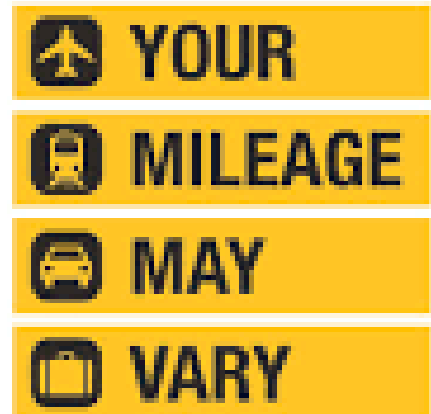
Take home message and discussion

None of this is medical advice!

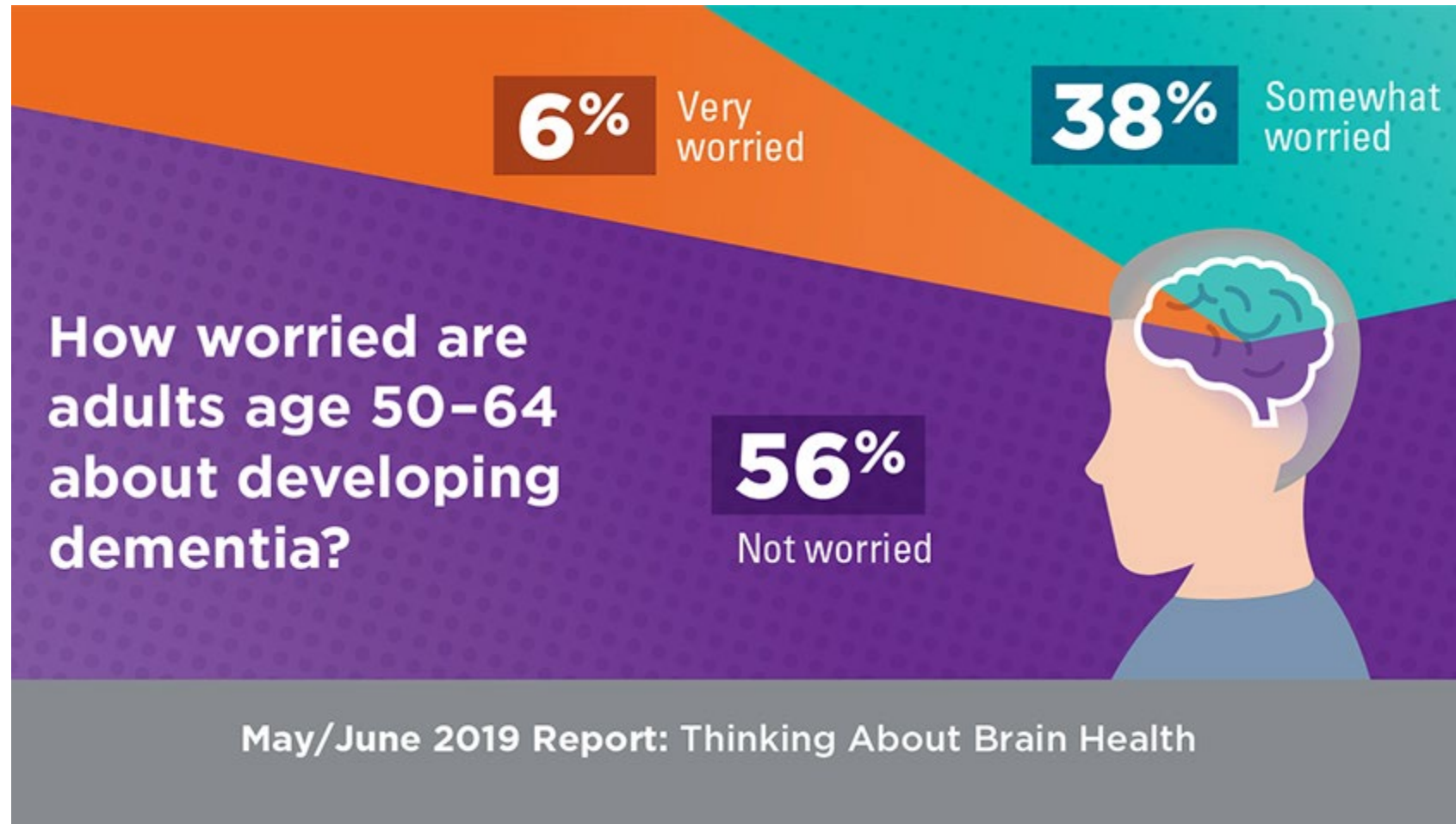


Prioritize facts, but listen to informed opinions

Your situation is unique



# Brain Health and Dementia Prevention





# Bad news about our brain health



Approved drugs help with symptoms, but not underlying disease  
There are no effective preventive treatments for brain health



Supplements are not regulated as therapeutics (only as food!)  
Class action suit against makers of Prevacen

## Who's Eligible

Individuals who purchased one or more Prevacen products from a Quincy Bioscience or an authorized retailer between Jan. 1, 2007 and July 21, 2020.

## Potential Award

30% cash refunds of up to \$70.

# Which supplements for brain health?



**None!**

Supplements may work, but there is no evidence



Fish intake ↓ risk for cognitive decline  
Omega-3 supplements don't help



Harvard Health Publishing  
HARVARD MEDICAL SCHOOL

*Trusted advice for a healthier life*

# Waiting for a pill to prevent dementia?



You are in for a long wait...



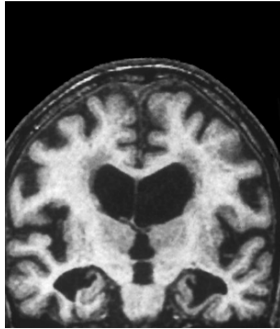
# Good news: Rates of Dementia Are Decreasing!

The New York Times

HEALTH

## U.S. Dementia Rates Are Dropping Even as Population Ages

By GINA KOLATA NOV. 21, 2016

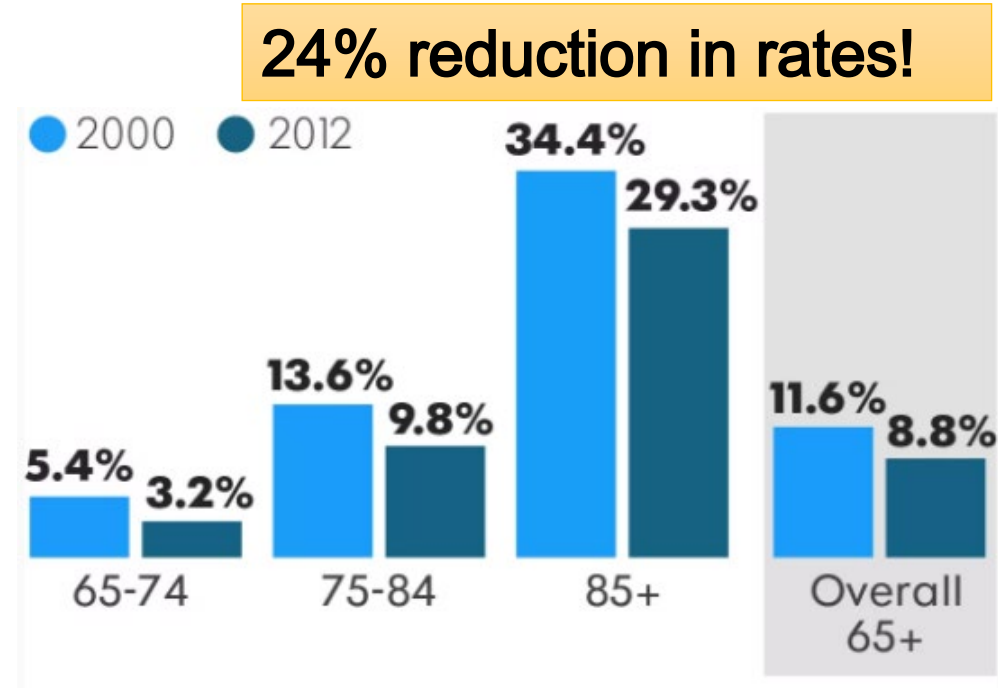
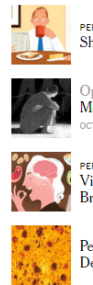


A MRI scan of the brain of a 64-year-old patient, showing evidence of Alzheimer's disease.  
Zephyr/Science Source

Despite fears that [dementia](#) rates were going to explode as the population grows older and fatter, and has more [diabetes](#) and [high blood pressure](#), a large nationally representative survey has found the reverse. Dementia is actually on the wane. And when people do get dementia, they get it at older and older ages.

Previous [studies](#) found the same trend but involved much smaller and less diverse populations like the mostly white population of Framingham, Mass., and residents of a few areas in England and Wales.

RELATED COVERS



Dr. Langa

“Even without a breakthrough in medication...there are things we can do to decrease [dementia] risk.”

<https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2587084>



# Dementia prevention, intervention, and care: 2020 report of the *Lancet* Commission

12 modifiable risk factors account for around 40% of worldwide dementia

## Early Life

7% Less Education

## Midlife

8% Hearing Loss

3% Traumatic Brain Injury

2% Hypertension

1% Alcohol use (>21 units/week)

1% Obesity

## Later life

5% Smoking

4% Depression

4% Social Isolation

2% Physical inactivity

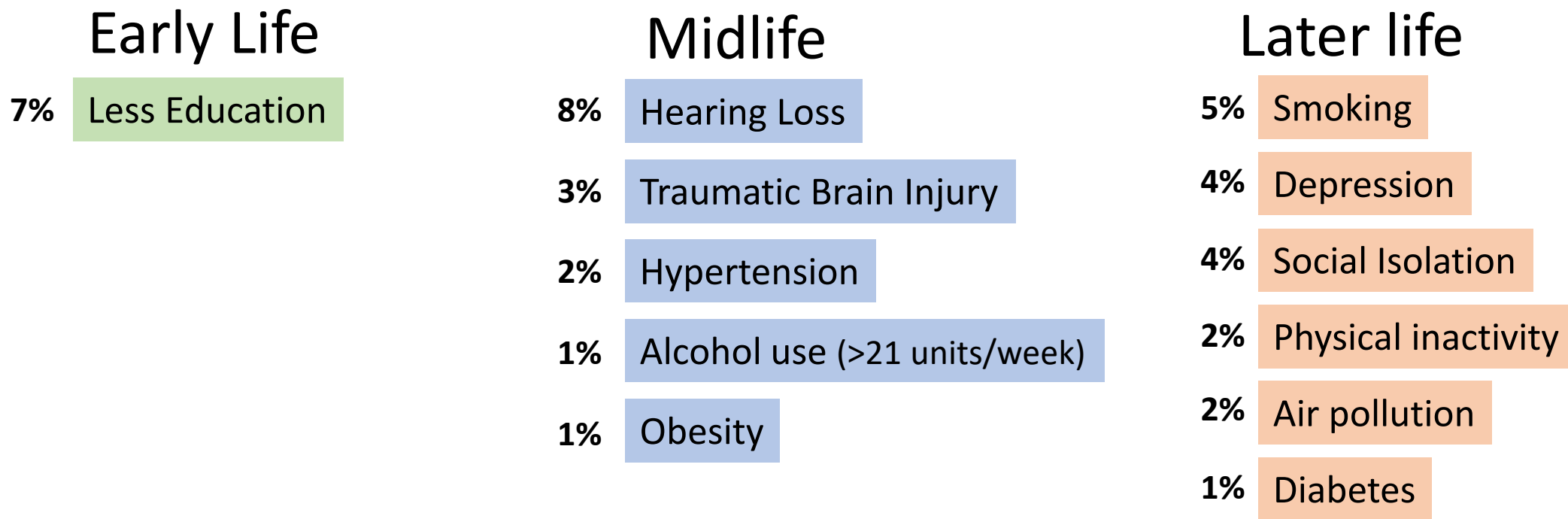
2% Air pollution

1% Diabetes

# Dementia prevention, intervention, and care: 2020 report of the *Lancet* Commission

12 modifiable risk factors account for around 40% of worldwide dementia

The remaining 60% may also be preventable



# Six Pillars of Brain Health

(<https://healthybrains.org/pillars/>)



**Physical Exercise**  
(Get moving!)



**Social Interaction**  
(Stay connected!)



**Food & Nutrition**  
(Eat smart!)



**Sleep & Relax**  
(Restore yourself!)



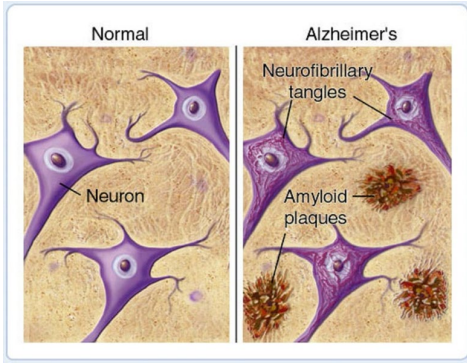
**Mental Fitness**  
(Use it or lost it!)



**Medical Health**  
(Control conditions!)



# How might diet impact dementia risk?



## Chronic Inflammation can “kick start” neurodegeneration

- Increases production of *beta-amyloid* in inflamed regions
- Reduces ability of microglia to “clear out” expelled waste
- Also linked to vascular dementia



High inflammatory diet: 27% ↑ in risk of cognitive impairment

<https://pubmed.ncbi.nlm.nih.gov/25681666/>



Low inflammatory diet: 50% ↓ in dementia incidence

<https://pubmed.ncbi.nlm.nih.gov/28531379/>



# The Mediterranean Intervention for Neurodegenerative Delay (The MIND diet)





# The Mediterranean Intervention for Neurodegenerative Delay (The MIND diet)

Give yourself 1 point for each YES

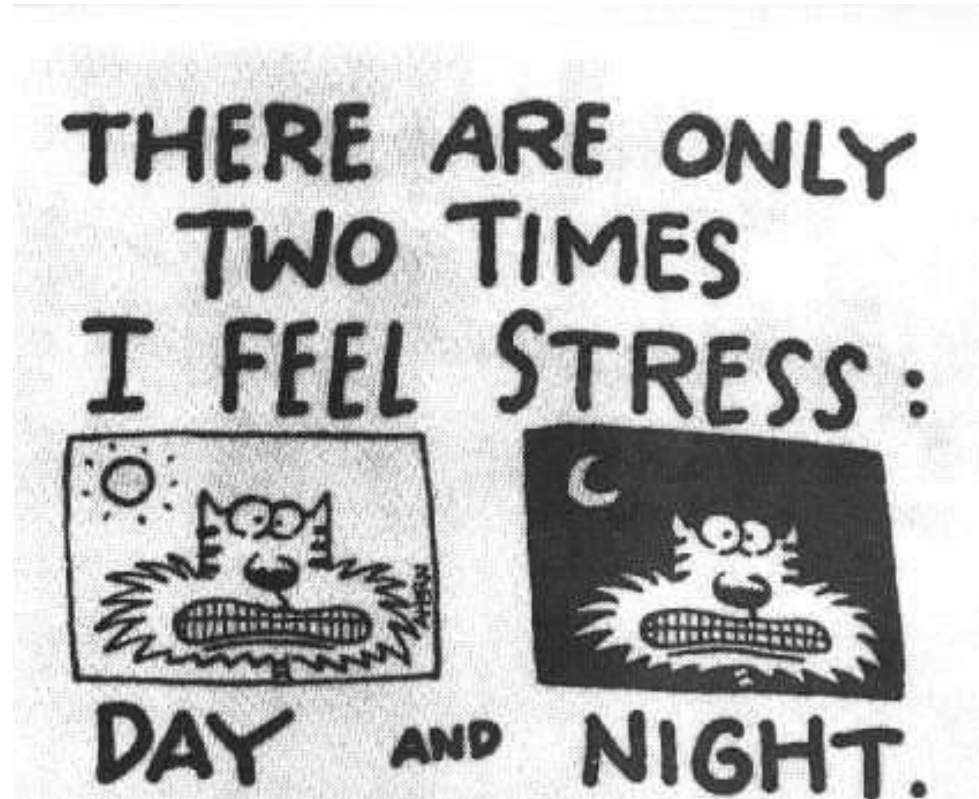
- $\geq 3$  servings of whole grains a day
- Green leafy vegetables  $\geq 6$  times a week
- Other vegetables at least once a day
- Berries  $\geq 2$ /week
- Fish  $\geq 1$ /week
- Poultry  $\geq 2$ /week
- Beans  $\geq 3$ /week
- Nuts  $\geq 5$ /week
- Mainly olive oil for cooking
- Red meat  $< 4$ /week
- Fried or fast food  $< 1$ /week
- $< 1$  tablespoon of butter/day
- $< 1$  serving of cheese/week
- $< 5$  pastries or sweets a week
- One glass of wine or other alcoholic drink a day

$\geq 7.5$  cut risk by dementia 50%

$\geq 10$  points: brains were 7.5 years younger

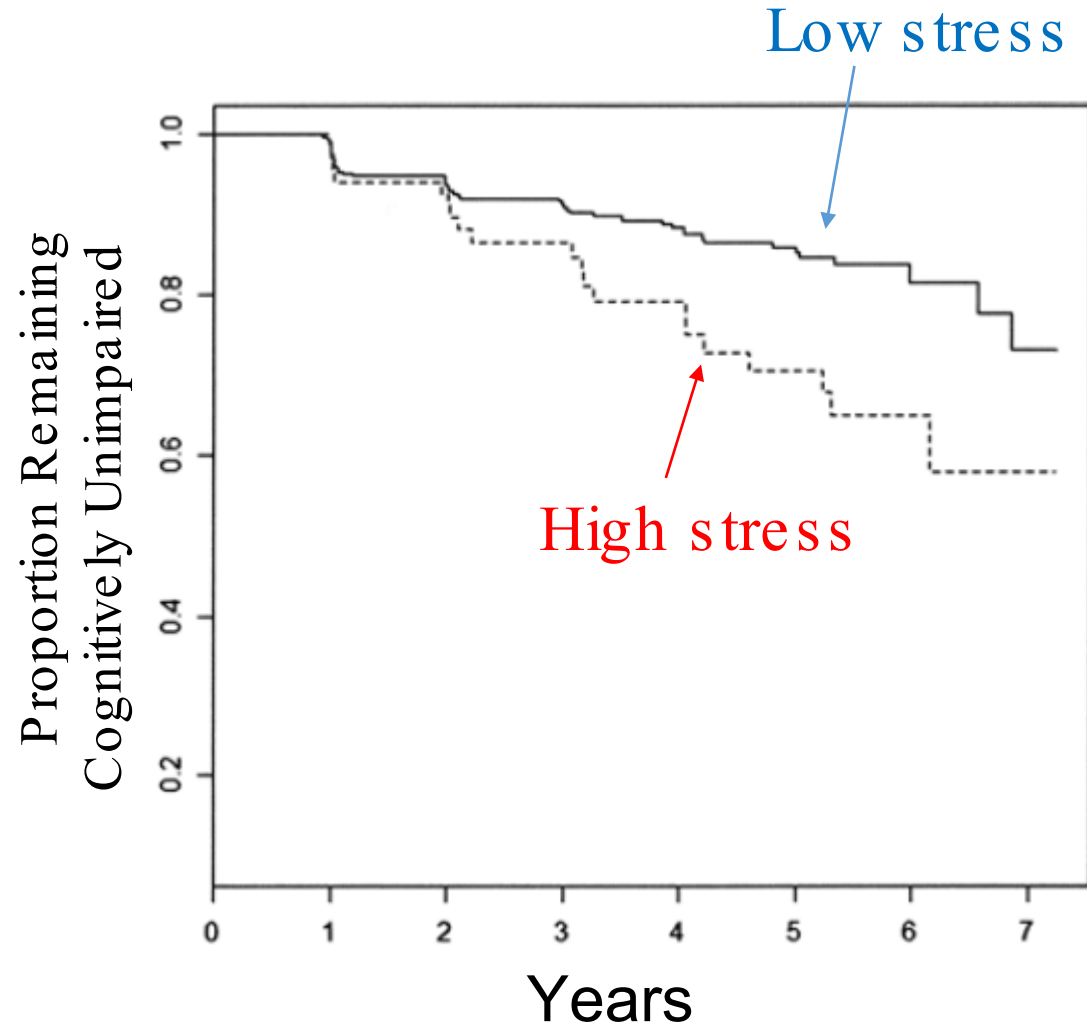


**Sleep & Relax**  
(Restore yourself!)



# Chronic stress harms brain health

In people 70+, high stress lasting one month doubled the risk of mild cognitive impairment



## Work stress during midlife

- Risk of vascular dementia
- Faster cognitive decline



# Stress affects our health behaviors



**Neglect friends/  
Self isolate**



**Poor diet**

**Stress promotes behaviors that increase risk for dementia (and other diseases)**



**Interfere with  
exercise**

"What fits your busy schedule better, exercising one hour a day or being dead 24 hours a day?"



**Sleep disturbances**

# Evidence -based stress management



Practice  
Mindfulness



Volunteering  
/help others



Keep your  
pleasurable activities



Take a moment  
in nature

# A room with a view...

Surgical patients randomly assigned a room during recovery...



Just viewing green space improved recovery



↓ postoperative stays



↓ demand for potent pain meds

<https://pubmed.ncbi.nlm.nih.gov/6143402/>

<https://www.sciencedirect.com/science/article/abs/pii/S0272494405801847>



**Try taking your brain for a walk!**



# Immediate benefits to your brain!



↑ Memory function (8 IQ points)

↑ Attention (10 IQ points)

Interacting with green space could be a “quick fix” to boost your brain function



# Longer term effects of proximity to green space

Proximity to roads is associated with ↑ risk for neurodegenerative conditions



Air pollution exacerbates risk



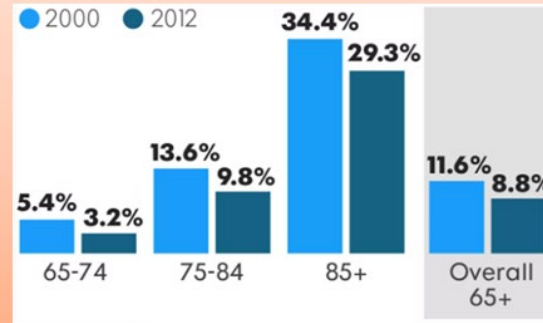
Green space may mitigate risk

The data says we need more data.



# Take Home Points

## Dementia Rates are decreasing!



## Dementia is Preventable Condition

### Early Life

7% Less Education

### Midlife

8% Hearing Loss

3% Traumatic Brain Injury

2% Hypertension

1% Alcohol use (>21 units/week)

1% Obesity

### Later life

5% Smoking

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1% Diabetes

## Things we should do



**Physical Exercise**  
(Get moving!)



**Social Interaction**  
(Stay connected!)



**Food & Nutrition**  
(Eat smart!)



**Sleep & Relax**  
(Restore yourself!)



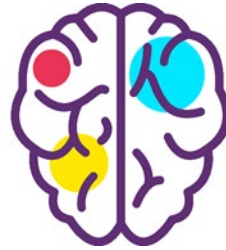
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## The Do's and Don'ts of Healthy Brain Aging



# THANK YOU!

