

@drmarcmilstein

Age-Proof Your Brain

Maximize Productivity, Boost Memory, Slow
Aging and Protect Your Brain

Dr. Marc Milstein

www.drmarcmilstein.com

Sudoku or Puzzles???

Brain Games??

6			2			9
	1		3	7		5
		3			1	
	9					2
2			8	7	5	
		5		1		4
	7			8		9
		1		4		8
			2	5	9	

This Week's Crossword Puzzle

ACROSS

1. Ladder for housing	34. Used a blender	59. Abominable kid	75. One of 'Do the Right Thing'	96. UFO passenger	115. St. Louis tourist attraction	63. Earth and accounts
4. Thanks through	36. Tigris coin	60. Bone fide	77. Minerals	98. Ladder part	64. - long	
13. Influenza signs	38. Not fish word	61. Specialty	78. Not clay (2 wks.)	99. Not only	119. Blue neighbor	61. Louis (12 wks.)
16. Downtight reason	40. Move with a saloon	62. Dutch report	79. News subject	100. Good to burn	121. Popped up	66. Bumps on a frog
21. Red paper pad	42. Running late	63. End of (2 wks.)	80. News subject	101. Conflict	122. Not on	69. Golf locale
22. " - visit error"	43. Think aloud	64. Zapper's brother	81. Long with partner	102. Family nickname	125. Carpal had one	71. Tally
23. Abused condition	45. Whim and Kelly	65. Car's seat	84. Prostate van	103. Galadriel's weapon	126. News and hypothesis	72. "The Catcher" author
24. Lary one	47. Shape	66. "Help Me, I'm Dying"	85. Chinese in a restaurant	104. Endorphin	127. Area -	74. Uterus a bluish
25. Clean	48. Hockey team	67. Song	86. Chinese in a restaurant	105. Head Gene-Genie	128. Medicine for	75. Top function
26. Theater awards	49. - up land	68. Telem. war (not love)	89. Dry yeast	106. Chain dance	131. Dunk in Digen	77. Name for a cow
27. Stay together	50. Crystal of country	69. - up land	90. Chinese in a restaurant	107. Not only	132. Card dealer	78. Red part
28. Thump	53. Engraving	70. Mo. bill	91. Chinese in a restaurant	108. Double date	134. Melissa had	79. Insect purchases
29. See phrase	54. Hand able	72. ABE team	92. Rummy perhaps	109. Double date	135. Check out a table	80. Insect feeding
30. Investment	57. Burn there	73. Teacher's exit	94. High-61 group	110. Smoke column	136. Europe Asia divider	81. Reddish brown bones
32. Daring documents	58. Use like paper	74. Beatles	95. Chinese version	112. Stage crowd	137. Bath costume	82. Power

DOWN

2. Carpal as a project	3. This and that	5. Holiday season	6. Displaced	7. Learning team team	8. Unknown	9. Mountain genre	10. Elbow or Lons	11. More sensible	12. " - again (10 quest. 1st)"	13. Back talk	14. Do surgery	15. Parking attendants	16. Stage element	17. No. inches	18. Cook slowly	19. Common fertilizer	20. Roman head	21. Redhead	22. Singer Indraganti	23. British via	24. Ruler alien	25. Red decker	26. Shiny too fast (Phyl)	27. Blue - color	28. "Gulls in the Mist" setting	29. Crowbar	30. Jean Paul Sartre	31. Red top	32. On the bank	33. Video game pioneer	34. Land	35. Mafiosi from Egypt	36. Not rising	37. Slender candle	38. Lump of clay	39. - Lally	40. ABE flowers	41. Rightward	42. Not abstract (2 wks.)
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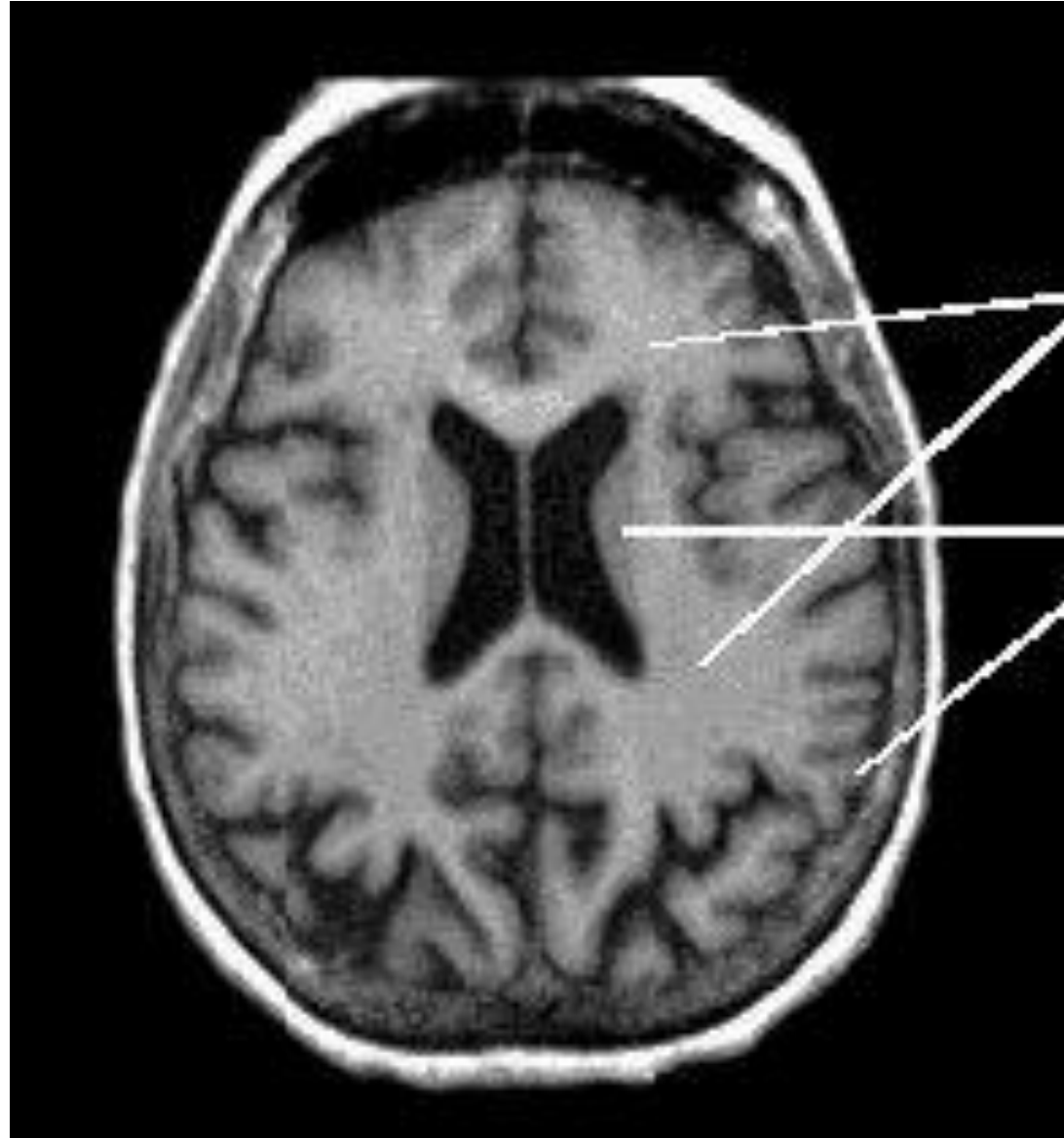


Surprising Things That
Will Really Make A
Difference

How Old Is
Your Brain?



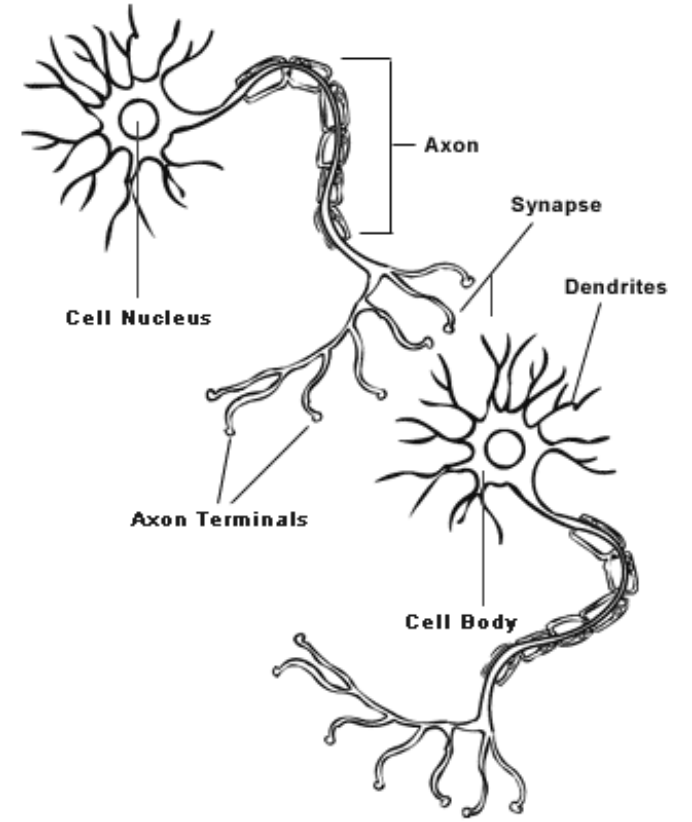
Brain Age



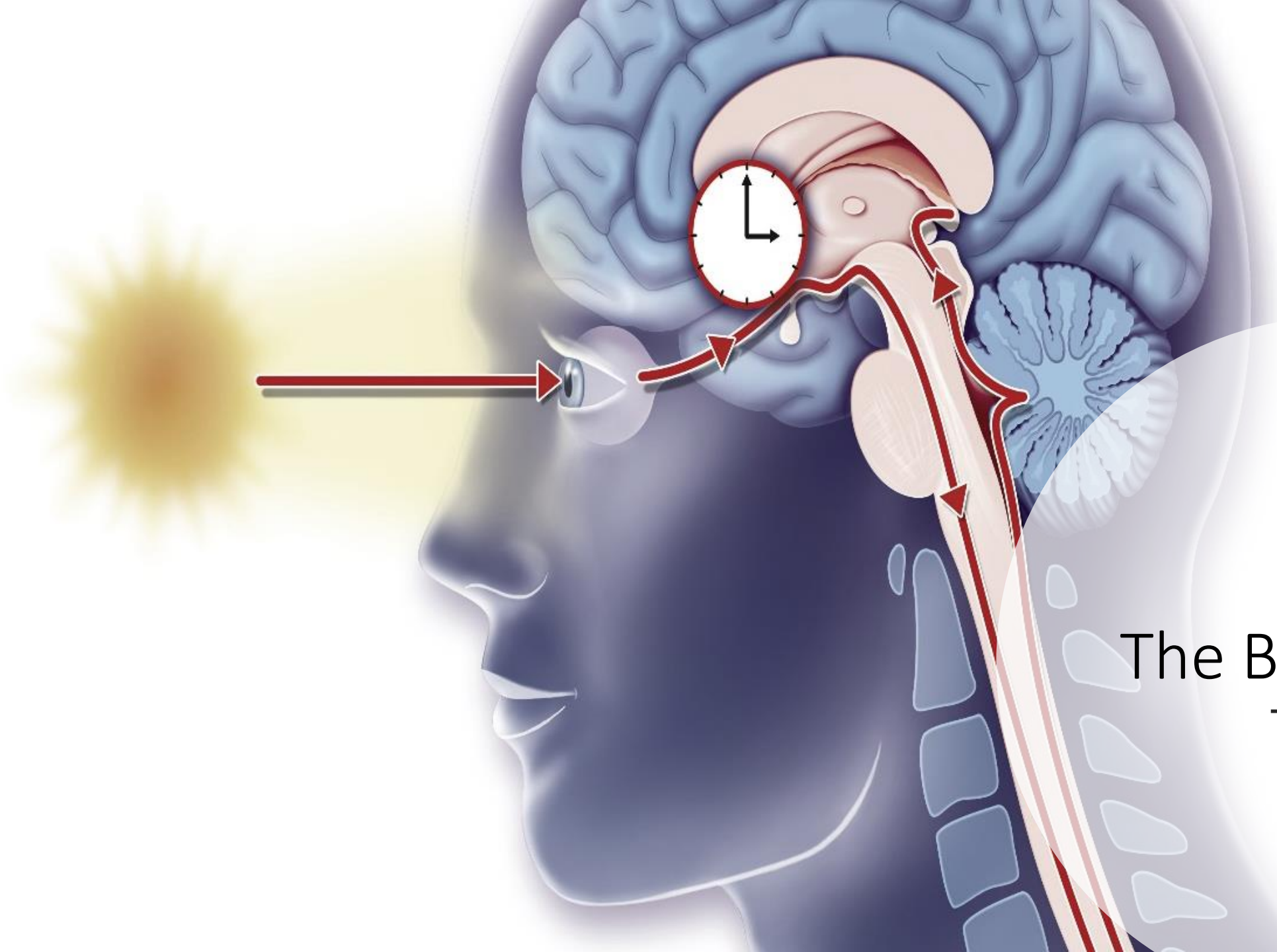
H Cole, S J Ritchie, M E Bastin, M C Valdés Hernández, S Muñoz Maniega, N Royle, J Corley, A Pattie, S E Harris, Q Zhang, N R Wray, P Redmond, R E Marioni, J M Starr, S R Cox, J M Wardlaw, D J Sharp, I J Deary. **Brain age predicts mortality.** *Molecular Psychiatry*, 2017;

How Are Sleep and Memory Related?

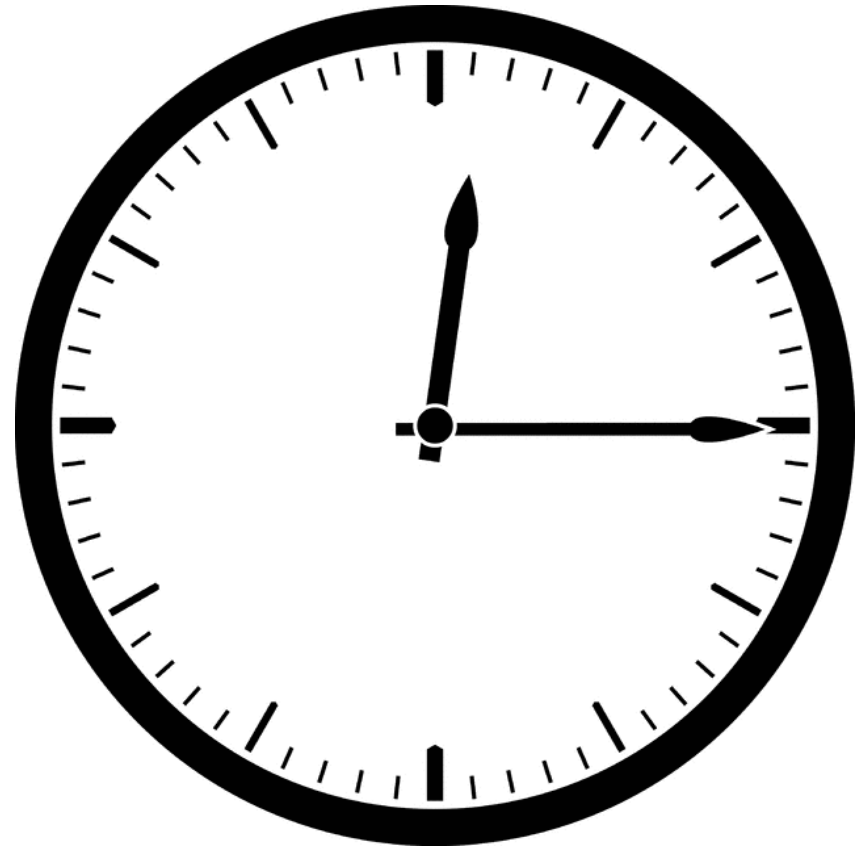
cottage / swiss / cake
cream / skate / water
show / life / row



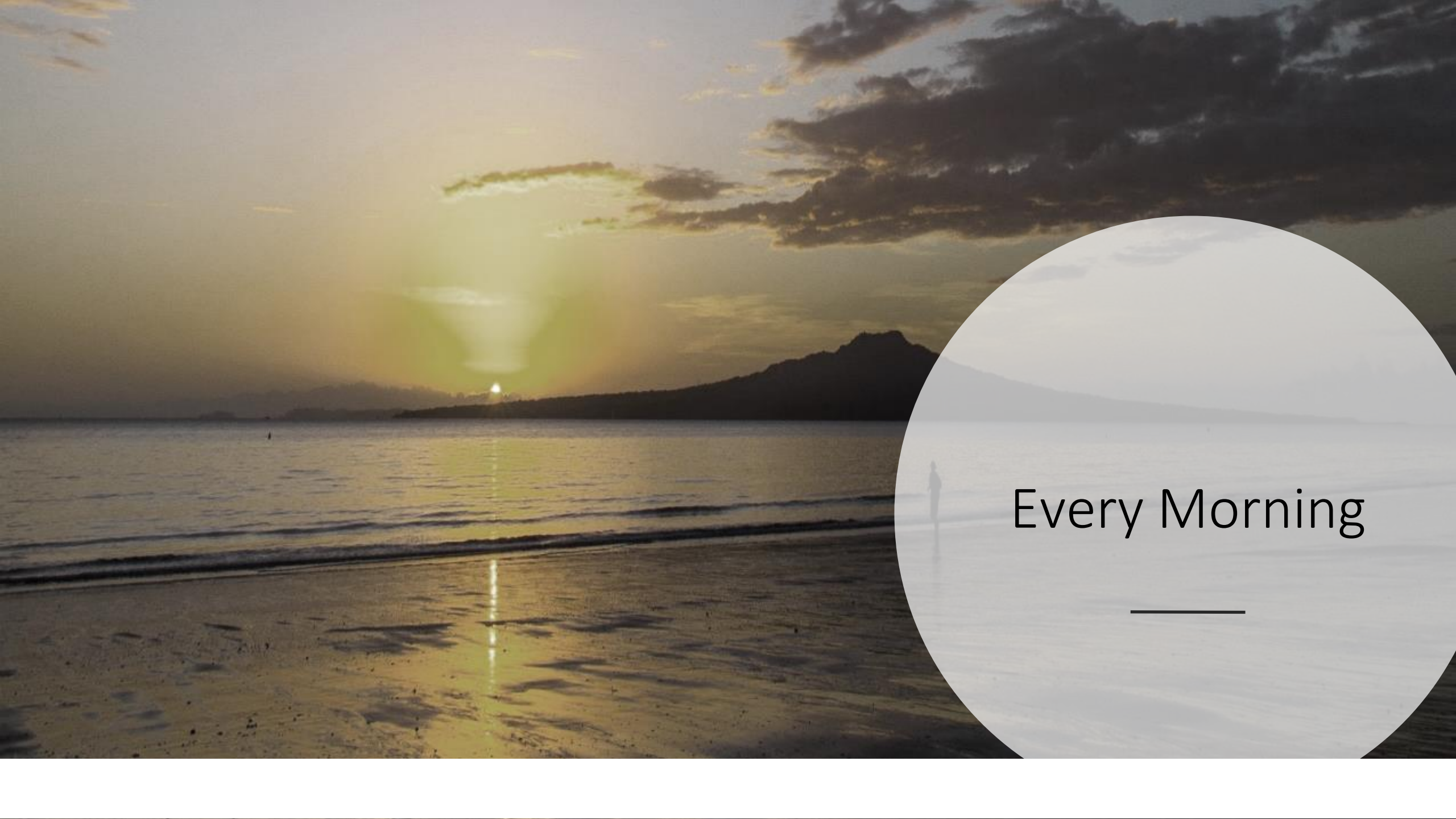
What Happens In Your Brain When You Learn Something
During The Day.....



The Brain Clock



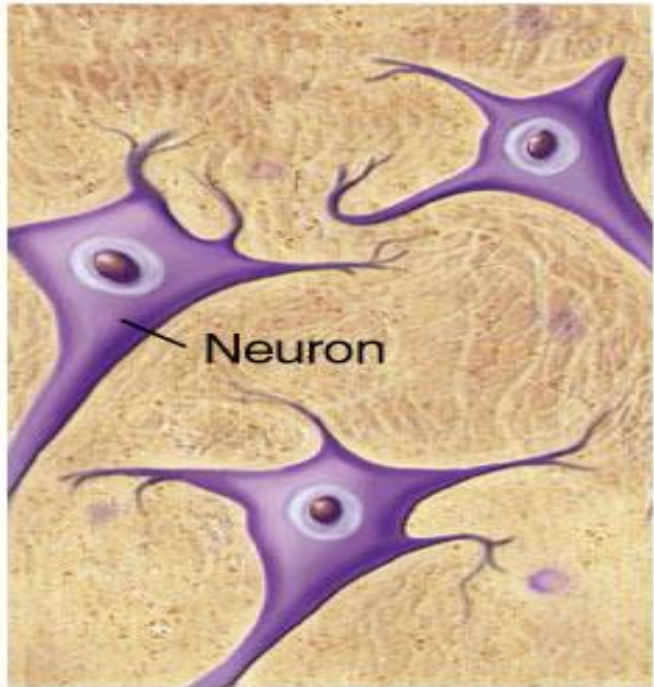
Clock Reset?



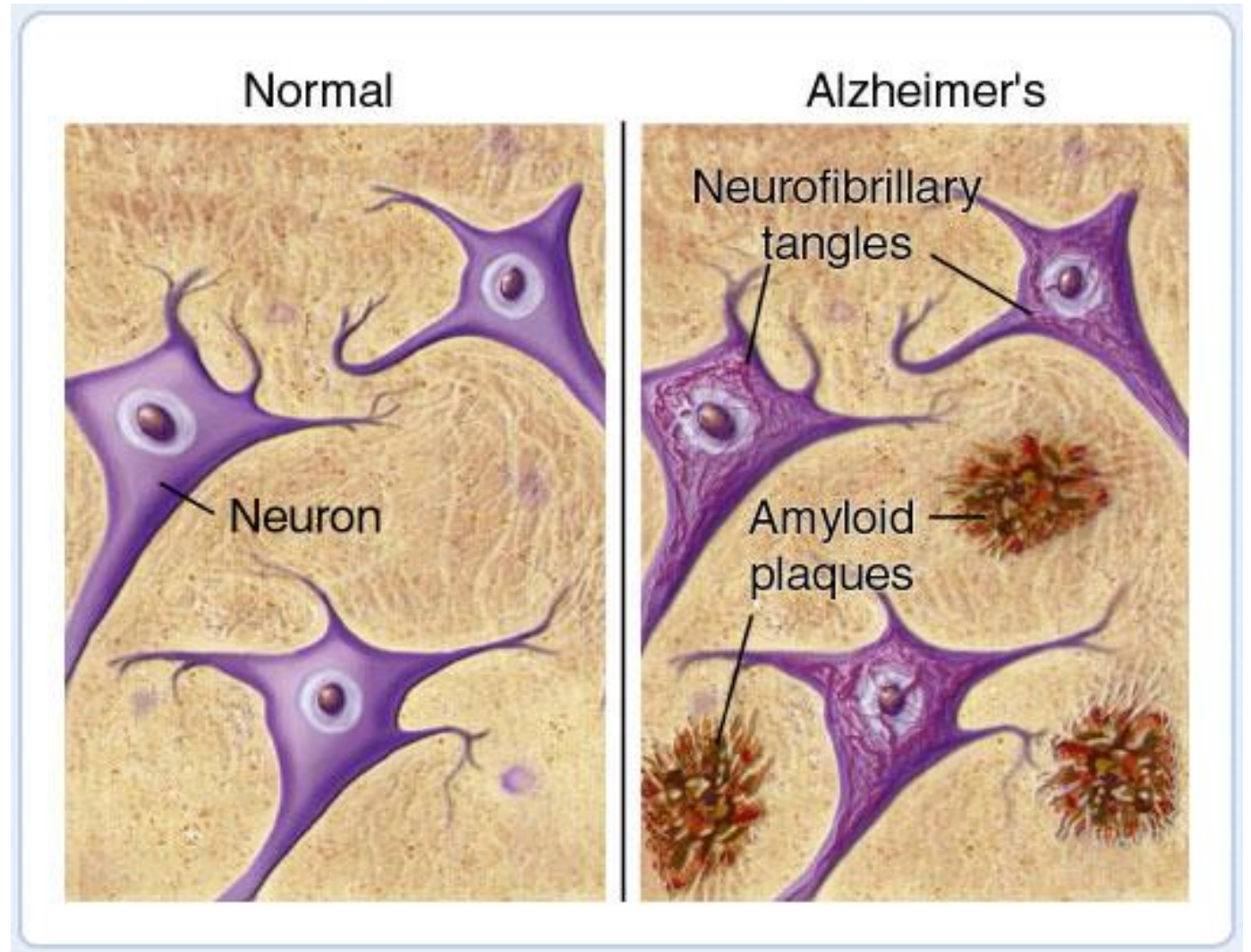
Every Morning

Brain Cells Are Like Factories

Normal



What Can Trash Interfere With?



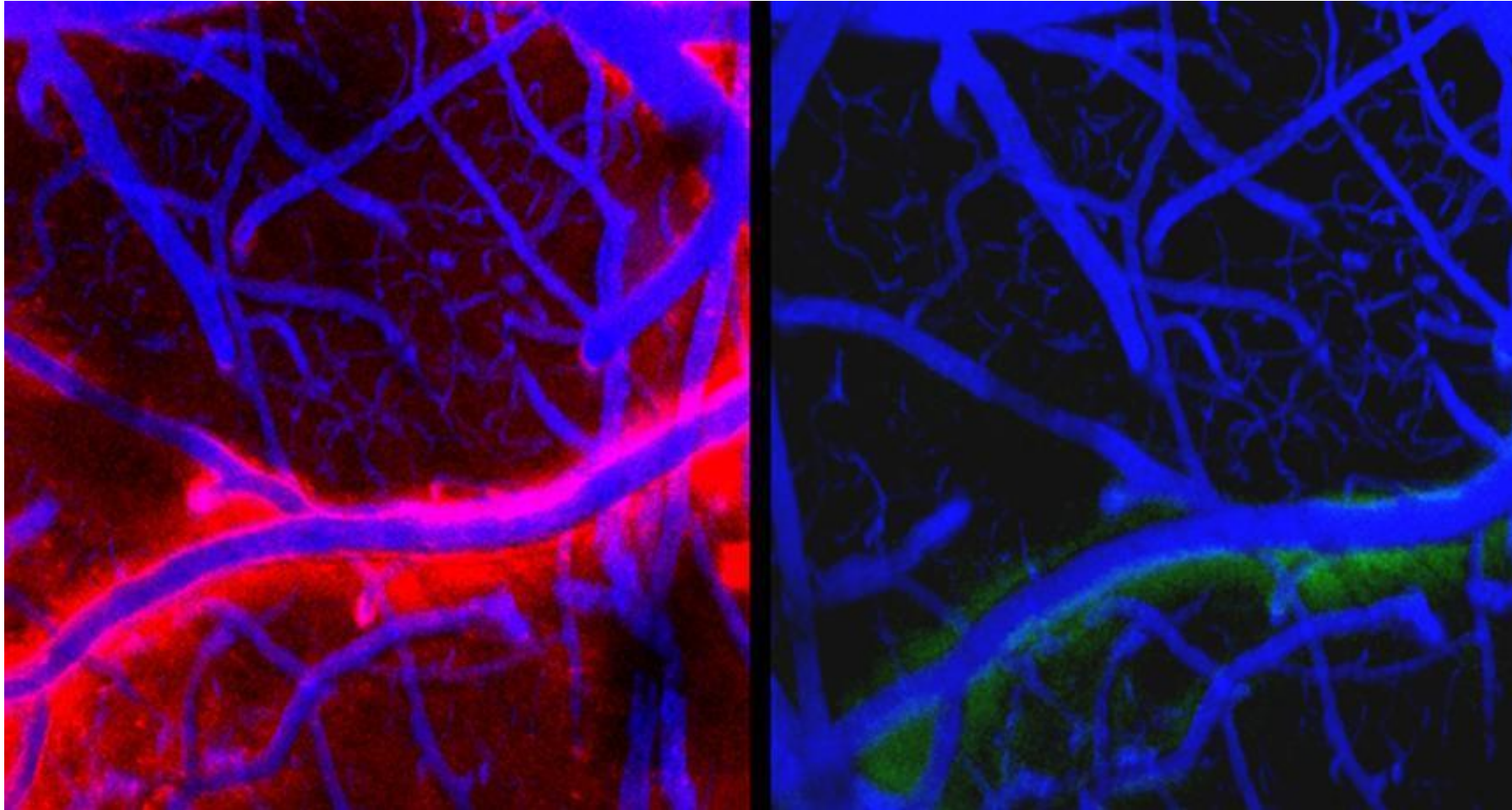
New Insight:

When Does Your
Brain Take Out The
Trash?

But First, How
Much Trash Do We
Make?



Brain Wash



While you are sleeping your brain shrinks by 60% and squeezes toxins out of your brain cells and gets a wash!

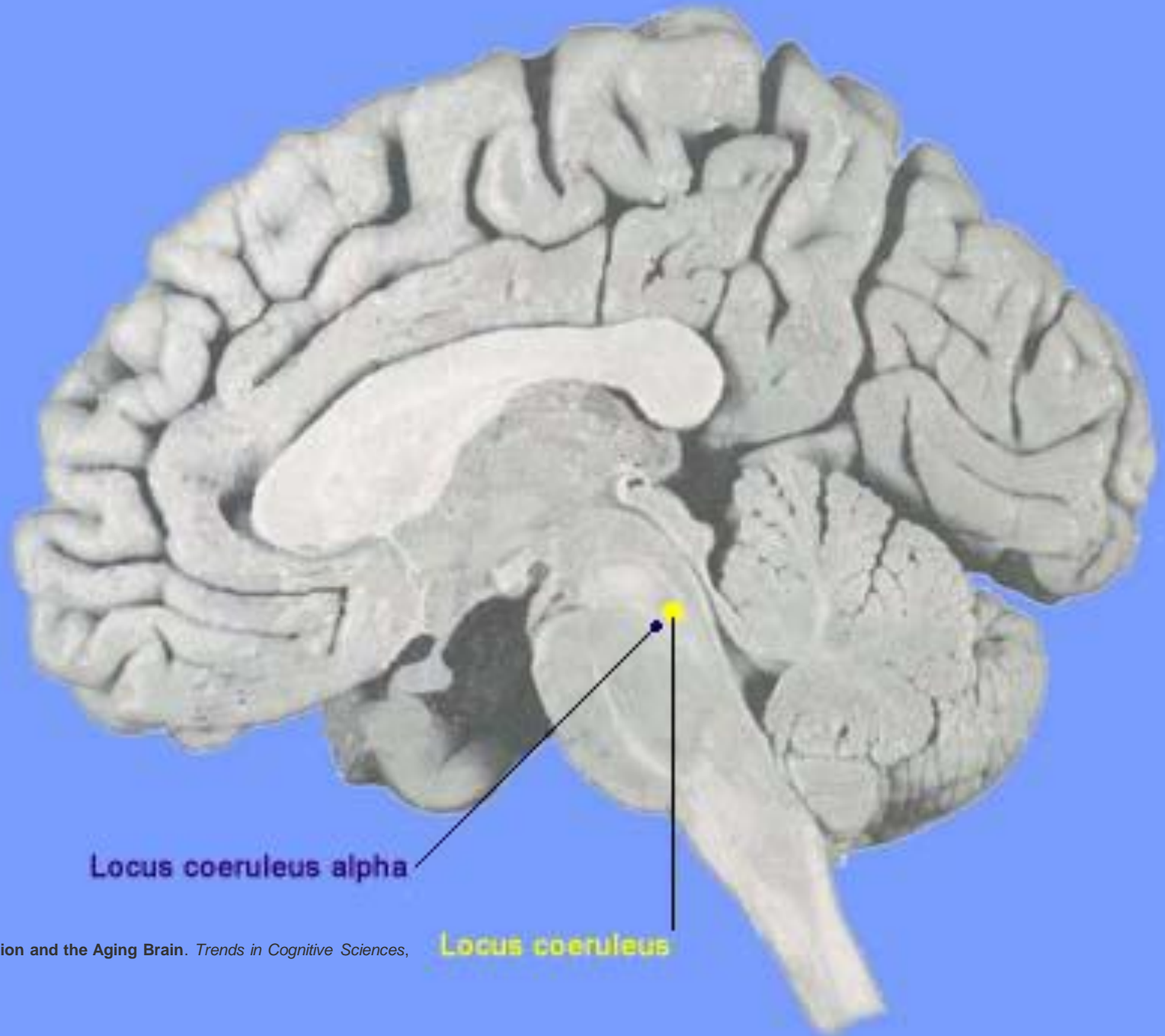
Over The Counter Sleep Aids



One More
Sleep Tip:



Another Way To Clean Your Brain



Locus coeruleus alpha

Locus coeruleus

Exercise Your Brain & Learn New Things



- Hearing
- Something you enjoy!



Isolated and Loss of Social Contact



Andrew Sommerlad, Séverine Sabia, Archana Singh-Manoux, Glyn Lewis, Gill Livingston. **Association of social contact with dementia and cognition: 28-year follow-up of the Whitehall II cohort study.** *PLOS Medicine*, 2019; 16 (8): e1002862 DOI: [10.1371/journal.pmed.1002862](https://doi.org/10.1371/journal.pmed.1002862)

Third Way To Clean Your Brain

Dimitrije Krstic, Amrita Madhusudan, Jana Doehner, Prisca Vogel, Tina Notter, Claudine Imhof, Abigail Manalastas, Martina Hilfiker, Sandra Pfister, Cornelia Schwerdel, Carsten Riether, Urs Meyer and Irene Knuesel. **Systemic immune challenges trigger and drive Alzheimer-like neuropathology in mice.** *Journal of Neuroinflammation*, 2012

What Do Microglia Do?



Cells known as microglia eat amyloid plaques and dying, tangle-ridden neurons.

Keep
Inflammation
Low

1. Effectively treat diseases that cause inflammation. Heart disease to autoimmune and injury. **Don't half treat.**
2. Ask your personal Doctor about checking inflammation. (CRP markers)
3. What else?



Does Diet Matter?

Martha Clare Morris, Christy C. Tangney, Yamin Wang, Frank M. Sacks, David A. Bennett, Neelum T. Aggarwal. **MIND diet associated with reduced incidence of Alzheimer's disease.** *Alzheimer's & Dementia*, 2015
Poonamjot Deol, Elena Kozlova, Matthew Valdez, Catherine Ho, Ei-Wen Yang, Holly Richardson, Gwendolyn Gonzalez, Edward Truong, Jack Reid, Joseph Valdez, Jonathan R Deans, Jose Martinez-Lomeli, Jane R Evans, Tao Jiang, Frances M Sladek, Margarita C Curras-Collazo. **Dysregulation of Hypothalamic Gene Expression and the Oxytocinergic System by Soybean Oil Diets in Male Mice.** *Endocrinology*, 2020; DOI: [10.1210/endo/bqz044](https://doi.org/10.1210/endo/bqz044)

The Mind Diet

Include These

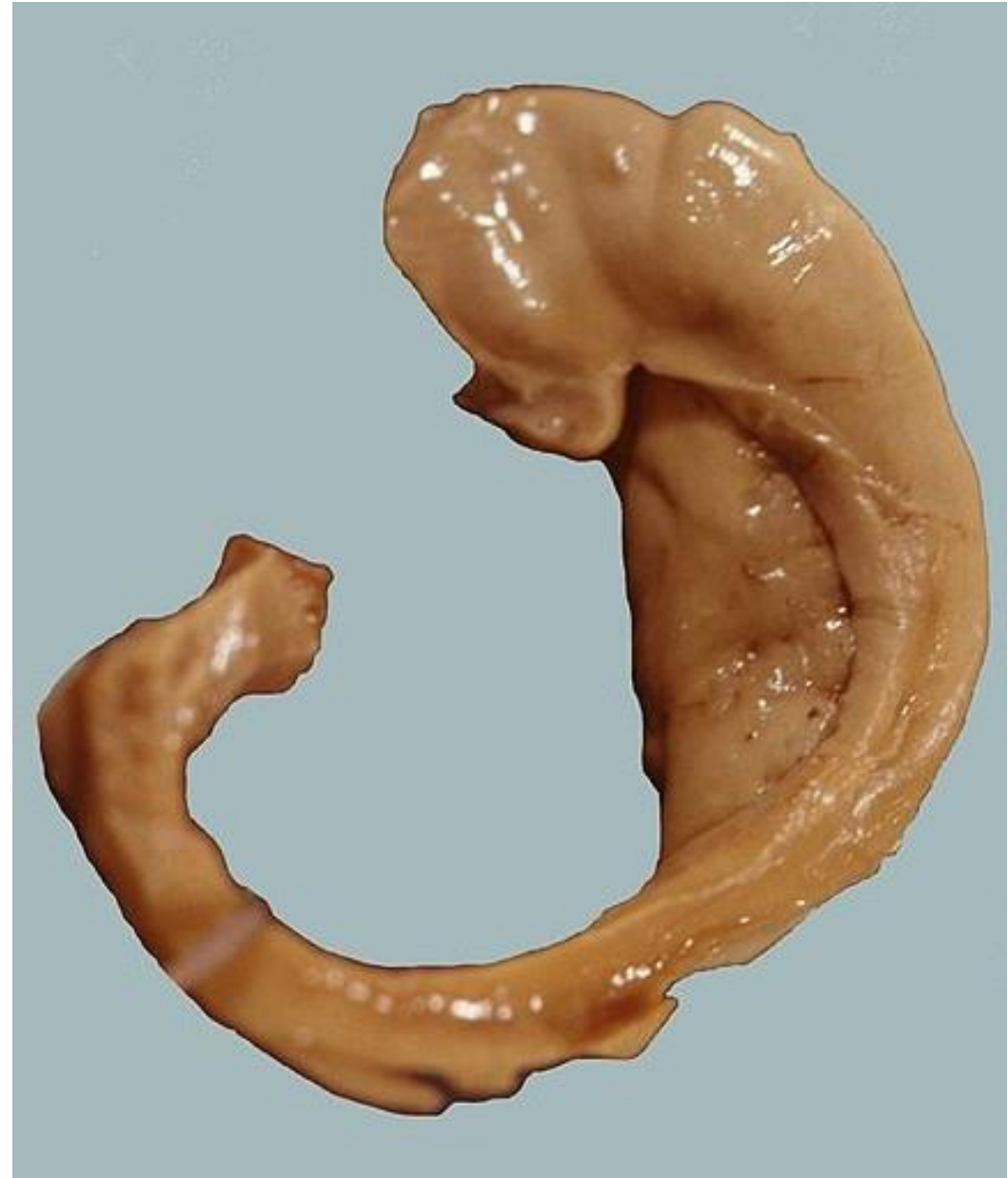
- **Green leafy vegetables:** every day
- **Other vegetables:** at least once per day
- **Nuts:** every day
- **Berries:** at least twice per week
- **Beans:** every other day
- **Whole grains:** three times per day
- **Fish:** at least once per week
- **Poultry:** at least twice per week
- **Olive oil**
- **Wine:** one glass per day

- MIND diet lowered Alzheimer's risk by about 35 percent for people who followed it moderately well and up to 53 percent for those who adhered to it rigorously.

Have You Had
This Happen?



What Does Hippocampus Do?



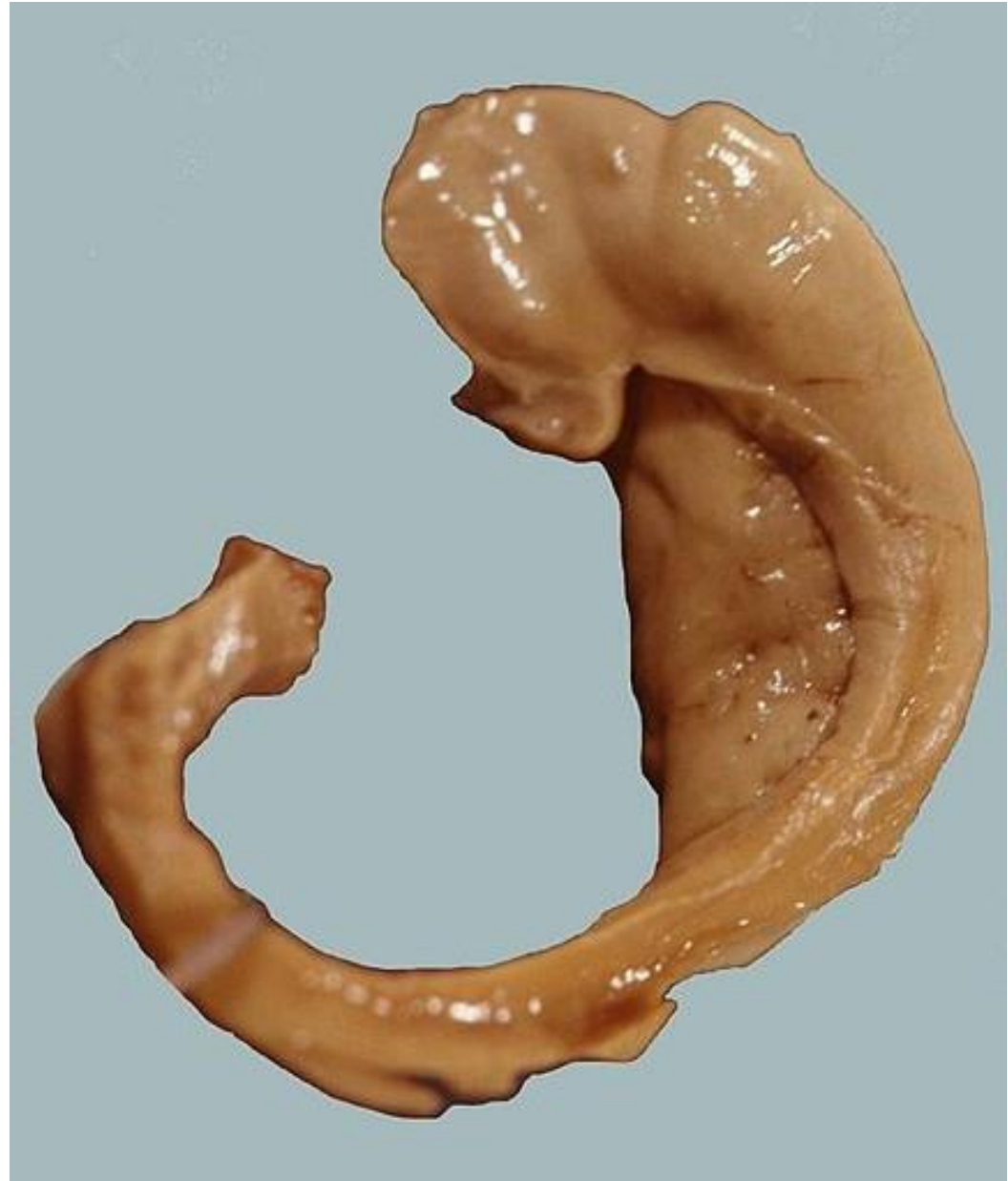
What is happening
to your
hippocampus???





Multi-tasking Can Be Multi-distracting

Keep
Hippocampus
Healthy and
Make It Grow



Stress and Brain Aging? The Surprise.....



Mindfulness Is
Now A Medical
Treatment:
Is This The Only
Way???



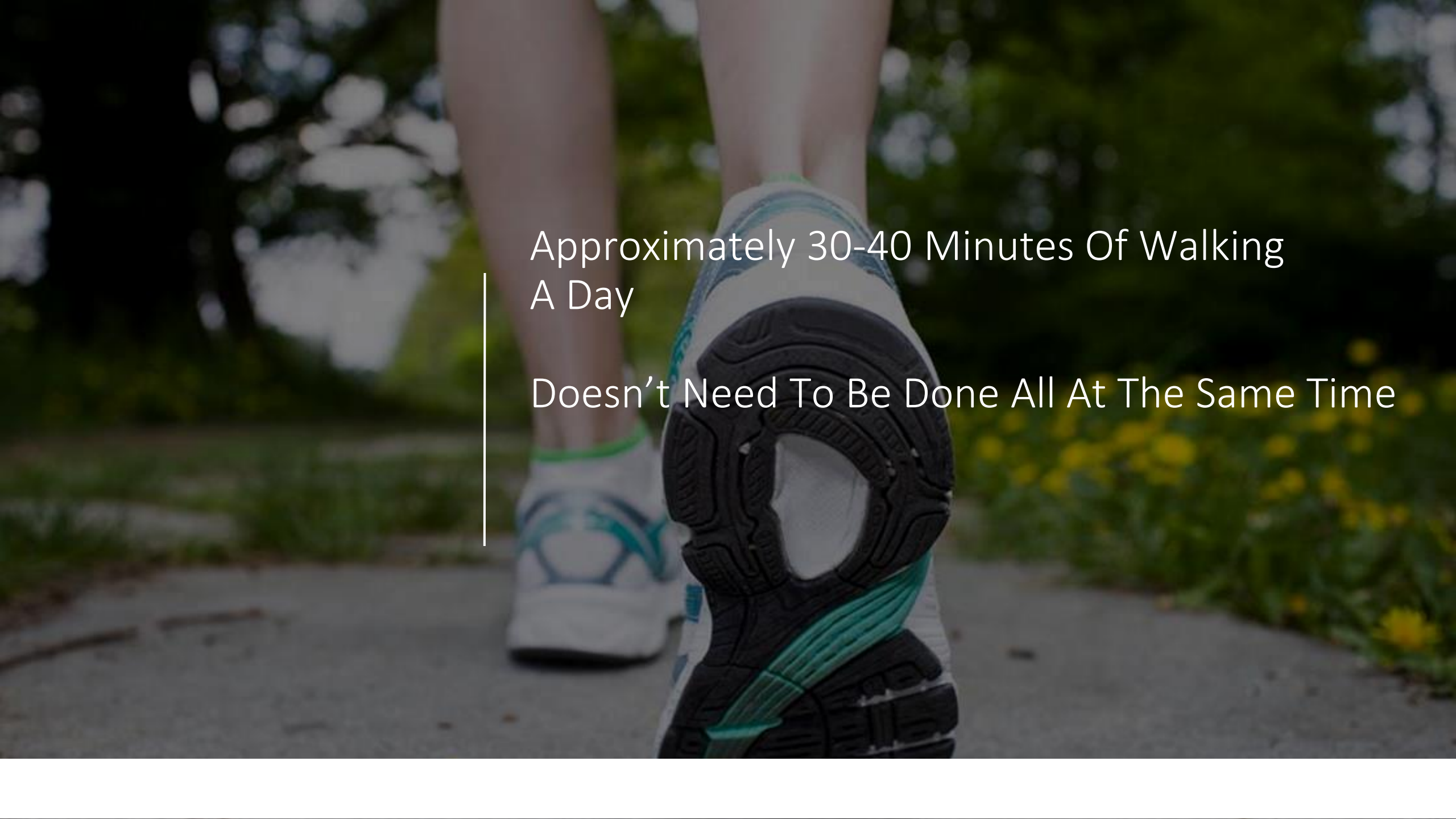
Nature: A Couple Minutes of Green Time:



Marselle Melissa R., Irvine Katherine N., and Warber Sara L. **Examining Group Walks in Nature and Multiple Aspects of Well-Being: A Large-Scale Study.** *Ecopsychology*, September 2014 DOI: [10.1089/eco.2014.002](https://doi.org/10.1089/eco.2014.002)

The Most Detailed Study Ever Done On The Effect of Lifestyle on The Risk of Getting Dementia

- Researchers followed 2,235 individuals with initial ages between 45 and 59 years old—for 30 years.
- Reduced their risk for cognitive decline and dementia by a staggering 60%.....

A close-up, low-angle shot of a person's legs and feet as they walk on a paved path. The person is wearing white athletic sneakers with teal accents. The background is a blurred outdoor setting with green foliage and yellow flowers. The image has a semi-transparent dark overlay on the right side where the text is located.

Approximately 30-40 Minutes Of Walking
A Day

Doesn't Need To Be Done All At The Same Time

Exercise Is Medicine For The Brain

- Helps blood flow to the brain
- Helps sleep
- Helps balance immune system.
- **How much exercise?**



Takashi Tarumi, Heidi Rossetti, Binu P. Thomas, Thomas Harris, Benjamin Y. Tseng, Marcel Turner, Ciwen Wang, Zohre German, Kristin Martin-Cook, Ann M. Stowe, Kyle B. Womack, Dana Mathews, Diana R. Kerwin, Linda Hynan, Ramon Diaz-Arrastia, Hanzhang Lu, C. Munro Cullum, Rong Zhang. **Exercise Training in Amnesic Mild Cognitive Impairment: A One-Year Randomized Controlled Trial.** *Journal of Alzheimer's Disease*, 2019; 1 DOI: [10.3233/JAD-181175](https://doi.org/10.3233/JAD-181175)

How Much Exercise?



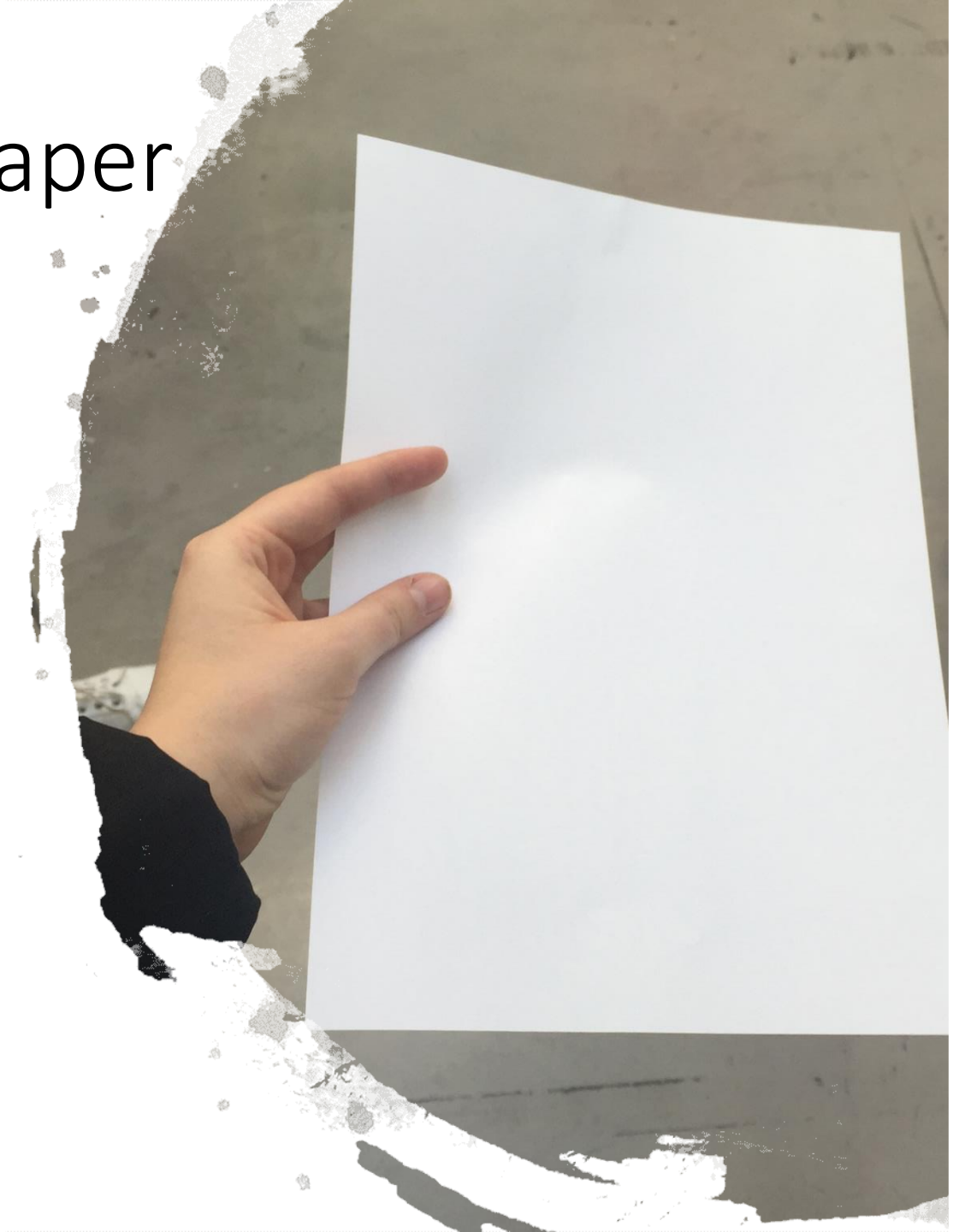
What About Taking The Stairs?



Jason Steffener, Christian Habeck, Deirdre O'Shea, Qolamreza Razlighi, Louis Bherer, Yaakov Stern. **Differences between chronological and brain age are related to education and self-reported physical activity.** *Neurobiology of Aging*, 2016;

The Important Piece of Paper

- For your personal doctor
- **Inflammation:** (CRP)
- **Heart:** (Homocysteine, Cholesterol and Blood Pressure)
- **Diabetes:** hemoglobin a1c



We Have This Data

1260 people from across Finland,
aged 60-77 years and at risk for
dementia.

What was the intervention?

And Weill Cornell Study

FINGER Intervention Results

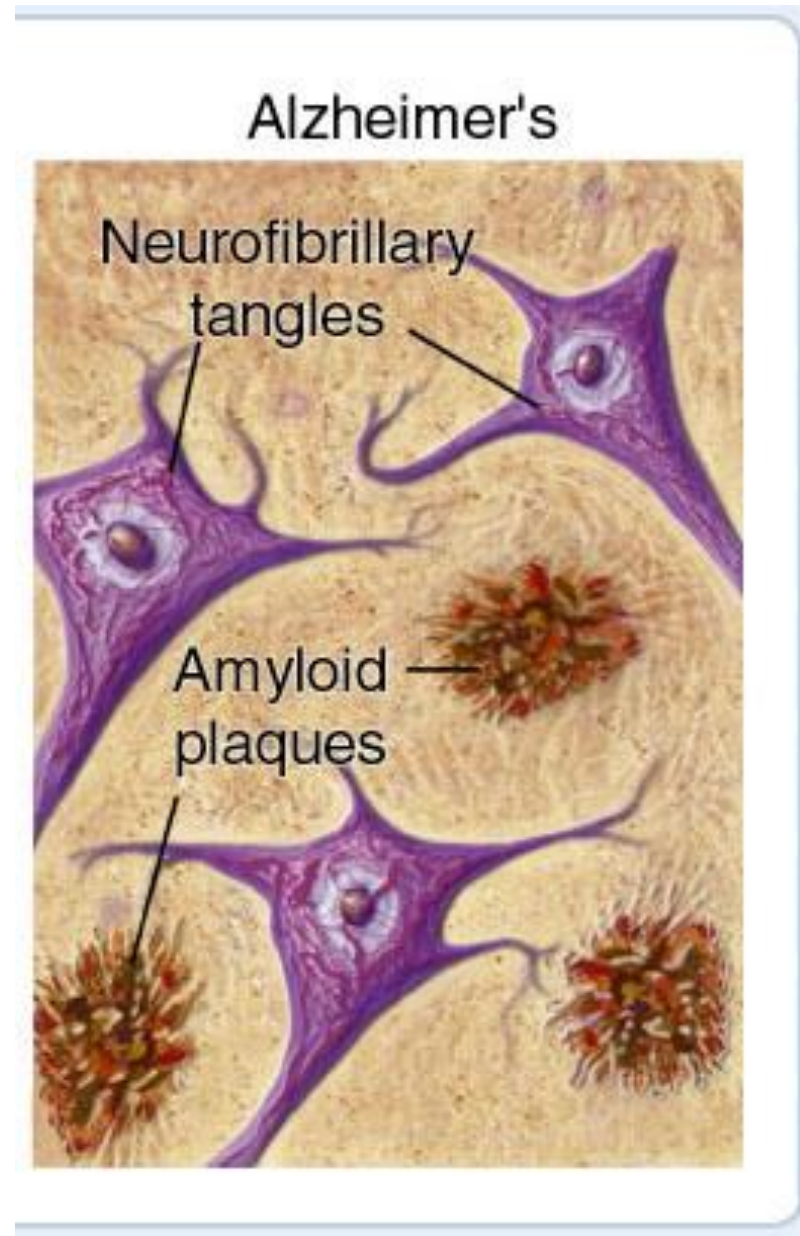
- Overall test scores in the intervention group were **25% higher** than in the control group.
- For executive functioning scores were **83% higher** in the intervention group
- Processing speed was **150% higher**.
- And Weill Cornell Study just published.

[Isaacson et al. Alzheimers Dement.](#) 2019 Dec;15(12):1588-1602. doi: 10.1016/j.jalz.2019.08.198. Epub 2019 Oct 31.

Individualized clinical management of patients at risk for Alzheimer's dementia

1. Tiia Ngandu, et al. A 2 year multidomain intervention of diet, exercise, cognitive training, and vascular risk monitoring versus control to prevent cognitive decline in at-risk elderly people (FINGER): a randomised controlled trial. *The Lancet*, 2015; DOI: [10.1016/S0140-6736\(15\)60461-5](https://doi.org/10.1016/S0140-6736(15)60461-5)

When Does Trash Form In The Brain?





Can We Reverse Aging In The Brain At Any Age?

- Most “Bang For Your Buck” Activities
- Can we beat exercise???





Dancing vs Treadmill/Stationary Bike

- Key point.....
- Why dancing?
- At any age we can make our brain younger.

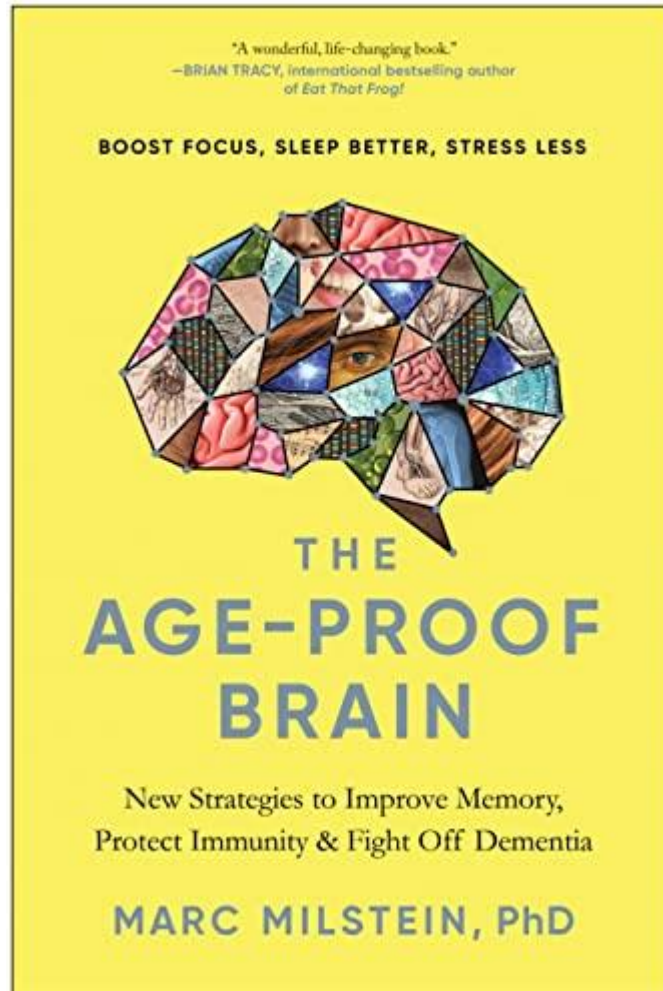
1. Kathrin Rehfeld, Patrick Müller, Norman Aye, Marlen Schmicker, Milos Dordevic, Jörn Kaufmann, Anita Hökelmann, Notger G. Müller. **Dancing or Fitness Sport? The Effects of Two Training Programs on Hippocampal Plasticity and Balance Abilities in Healthy Seniors.** *Frontiers in Human Neuroscience*, 2017; 11 DOI: [10.3389/fnhum.2017.00305](https://doi.org/10.3389/fnhum.2017.00305)

The Best Things You Can Do For Your Brain

6 Major Tips

- Sleep
- Learn New Things and Be Socially Engaged
- Manage Stress/Mindfulness
- Moderate Exercise/Walking
- Underlying Conditions
- Eat Real Food

For Today:



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