

Complementary Alternative Medicine for Brain Health

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- No related disclosures

Brain Health

- Alzheimers disease (AD) most common cause (60-80%) of dementia
- Affects 1 in 9 individuals in US age 65 and over
- Estimated global cost for AD is expected to be >\$2.8 trillion
- WHO definition of brain health: ability to function across cognitive, sensory, socio-emotional, behavioral and motor domains which allow an individual to actualize their full potential over life's course

Integrative holistic therapies

- Nutrition
 - Food as medicine
- Exercise
 - Healthy body, healthy brain
- Sleep
- Mind-body therapy
 - Meditation, tai chi, yoga

Let food
be thy
medicine



Nutrition

- Protein: fish, chicken, lean cuts of red meat
 - Nuts: Brazil nuts (selenium), cashews (copper, magnesium), almonds (calcium, Vit E), pistachios (lutein, B6), walnuts (Om 3FA)
 - How much do you really need?
 - 1.2gm/kg prot to limit muscle loss (w/ resistance training)
 - 1.4 to 1.6gm/kg prot to build muscle mass (w/ resist training)
- Fruits and vegetables - 5 servings/day
 - Choose brightly colored, e.g. tomatoes, berries, broccoli, avocado, and spinach
- Whole grains (gluten free)
 - Brown rice, quinoa, teff, buckwheat, oats, millet, amaranth



Nutrition: Omega 3 Fatty acids

- Food is best source
 - Fish, flaxseeds, walnuts
- Supplements: 3:2 ratio of DHA:EPA
 - 1000mg/D (excess bleed with higher doses)
 - Freeze to get rid of fishy taste
- Reduces risk of stroke and cardiac disease
- May also reduce Alzheimer's disease and cognitive decline when part of a healthy diet (e.g., fish)



Nutrition: Fruits and Vegetables

- At least 5 servings/day
- Beneficial in cancer, heart disease, stroke prevention, diabetes, arthritis, weight loss, Alzheimer's disease and the immune system
- Choose brightly colored fruits and veggies
 - Tomatoes, berries, broccoli, avocado and spinach
- Berries = brain food
 - May function as natural "aricept"



Nutrition: Nuts

- Antioxidants, vitamins, essential fatty acids
- Walnuts: omega-3 FA
 - Improves cholesterol
- Cashews: copper, magnesium
- Brazil nuts: selenium
- Almonds: Vitamin E and calcium
 - Helps with Parkinson's disease
- Pistachios: lutein and B6
- Best when eaten raw or without oils



Nutrition: Dark Chocolate

- Flavanols: may potentially help fight stroke, heart disease, and dementia
- Increases blood flow to the brain
- 1 ounce per day



Nutrition: Gluten free

- May be helpful for weight loss, metabolic syndrome, diabetes
- Use spaghetti squash instead of pasta noodles
- Brown rice
- Quinoa
- Teff
- Buckwheat



Nutrition: Vitamin B12

- Found in animal products
- Needed for the nerves, spinal cord, brain, and eyes (optic nerves),
- Routine B12 level is not enough:
 - Methylmalonic acid (MMA)
 - Homocysteine
- Sublingual (under the tongue) or Injections

Nutrition: General tips

- Avoid/reduce alcohol intake
- Cut sugar, artificial sweeteners
- Reduce processed foods
 - If you can't pronounce it, don't buy it
- Eat what you can digest
 - Kale, cauliflower, lentils, beans, chickpeas
- Reduce dairy intake
- Eat mindfully
- Drink water

Original Contribution

Sugar- and Artificially Sweetened Beverages and the Risks of Incident Stroke and Dementia A Prospective Cohort Study

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Neurology[®]

RESEARCH ARTICLE

Association Between Consumption of Low- and No-Calorie Artificial Sweeteners and Cognitive Decline

An 8-Year Prospective Study

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Neurology[®] 2025;105:e214023. doi:10.1212/WNL.0000000000214023

BMJ. 2017; 357: j2353.

PMCID: PMC5460586

Published online 2017 Jun 6. doi: [10.1136/bmj.j2353](https://doi.org/10.1136/bmj.j2353)

Moderate alcohol consumption as risk factor for adverse brain outcomes and cognitive decline: longitudinal cohort study

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Exercise

Exercise

- Reduces risk of heart disease, stroke, diabetes and dementia even if genetically predisposed
- Aim for 150min/week
- Autophagy
 - Recycling of broken down proteins and other cellular debris to use for fuel
 - With increased exercise, there is increased autophagy which may slow onset of Alzheimer's disease, can lead to increased endurance, and protect against diabetes
- Aqua therapy, recumbent bicycle, rowing machine, walking

4 Rules of Exercise

1. Pick something you like or can tolerate
2. If you feel tired or worse 2 hours after you've worked out you've done too much
3. Try to do something every day
4. No Pain/No Gain does not apply

Sleep

Sleep

- Patients ≥ 65 years with <5 hrs of sleep/night twice as likely to develop dementia compared to those with 6 to 8hrs/night
- Also with increased risk of death
- ≤ 6 hrs/night at age 50, 60, 70 yrs associated with 30% increase risk of dementia compared to 7 hrs
- **Healthy sleep duration= 7 hours**
- Optimize sleep hygiene
 - Reduce screen time (blue light effect)
 - Reduce alcohol

Sleep hygiene

- Reduce screen time (blue light effect) at least one hr before bedtime (10-3-2-1 rule)
- Reduce alcohol
- Use dimmer lights near bedtime and reduce overhead lighting
- **Sleep regularity**
 - Consistent # of hours more important than actual number
 - Reduces risk of premature death by 20 to 48%
 - Irregular sleep: inconsistent sleep/wake times, interrupted sleep and napping

Sleep

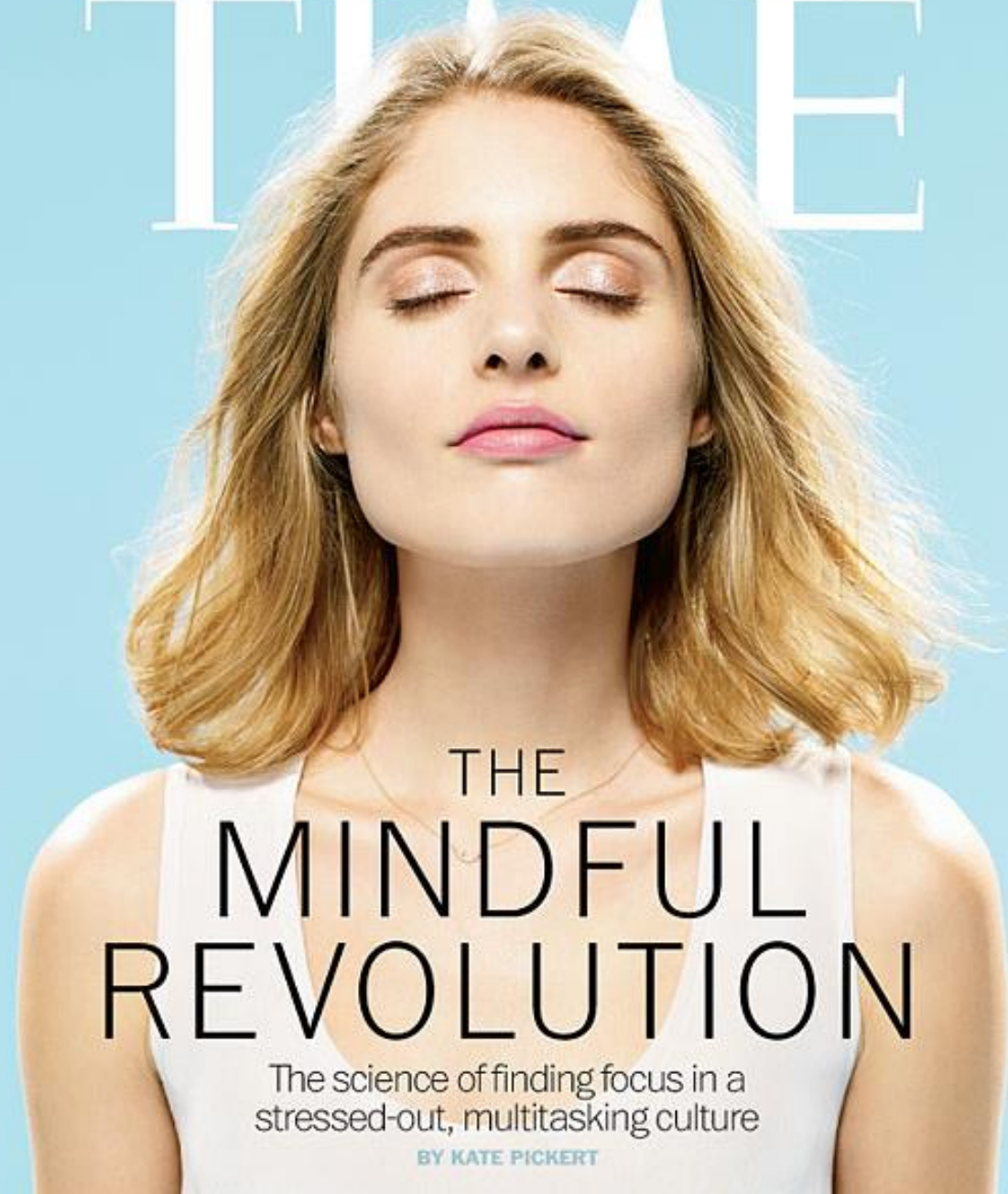
- **Yoga:** improved sleep latency, total sleep and quality
- **Acupressure/acupuncture:** mixed results with similar benefit in sleep quality to medications
- **Tai Chi:** improved sleep duration, latency, quality and efficiency
- **Mindfulness based stress reduction**
 - Improved total wake time, pre-sleep arousal scale, and insomnia severity
- **Melatonin** 1-5mg taken 30 min to 2hrs prior to bedtime
- **Tart cherries** (contains melatonin)

Mind Body Therapies

FEBRUARY 3, 2014

Fleeing Syria Photographs by James Nachtwey / Peyton Power / Steve McQueen

TIME



THE
MINDFUL
REVOLUTION

The science of finding focus in a
stressed-out, multitasking culture

BY KATE PICKERT

Types of mind-body therapies

- Mindfulness meditation
 - Nonjudgmental awareness of the present moment
- Concentration meditation
 - Focused attention on object, image, sensory stimuli
 - Mindful breathing is actually concentration
- Movement meditation (combination)
 - Yoga: breathing, postures
 - Tai chi: rooted in martial arts
 - Qigong: movements with release of energy





MEDITATION,

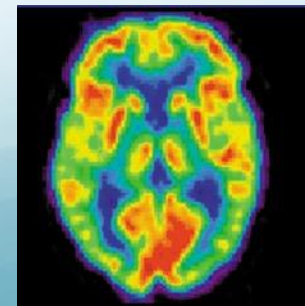
**BECAUSE SOME QUESTIONS
CAN'T BE ANSWERED BY GOOGLE.**

What happens in the mind?

- A thought is a natural function of the brain that draws from the mental processing of our experiences
- 60,000 thoughts a day – over 90% are about ourselves
 - Study on secrets
- Space in between the thoughts is peace

Effects of Meditation on the Body

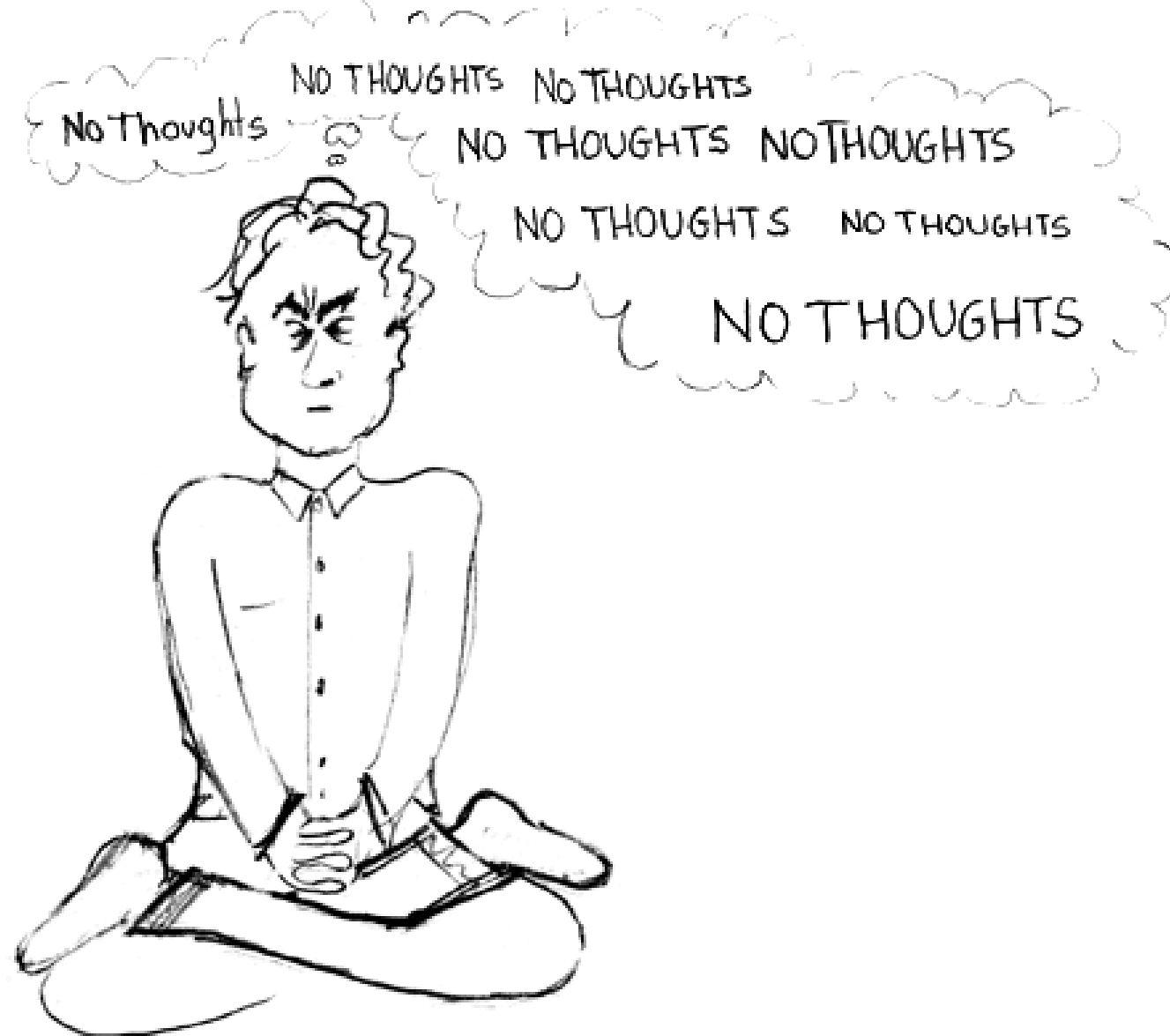
- Increases brain mass in areas for learning and memory
- Improves BP and insulin resistance (Merz et al 2006)
- Reduced mortality in patients over 55 (Schneider, et al 2005)
- Reduces risk of dementia
- Helps with urinary incontinence (Michelfelder et al, 2009)
- Decreases severity of congestive heart failure (Jayadevappa et al 2007)



Effects of Meditation on the Mind

- Reduces stress and depression (Kabat-Zinn et al, 1992)
- Reduces relapse rate of depression (Teasdale et al, 1995)
- Reduces anxiety (Tacon et al, 2003)
- Improves mood disturbances (Speca et al, 2000)





HOW NOT TO MEDITATE

Everyday Mindfulness

- Benefits may be seen with just 20 min/D
- Sitting practice with breathing techniques
- Mindfulness in the car
 - 5 deep breaths
- Mindfulness with walking
 - Walk quickly with no distractions
- Mindfulness at your desk
 - Look out the window or at the ceiling
 - Shift in the gaze=shift in your thoughts

Patient resources



- Community classes
 - YMCA, gyms/health clubs, wellness centers
- Books/CDs: Jack Kornfield, John Kabat-Zinn
- MBSR courses (local universities, webinars)
 - <https://www.umassmed.edu/cfm/mindfulness-based-programs/mbsr-courses/>
- Meditation retreats:
 - www.dhamma.org (multi-locations, free)
 - www.dharma.org (Barre MA, sliding scale fees)
 - www.spiritrock.org (northern CA, \$\$)

Other important factors

Relationships

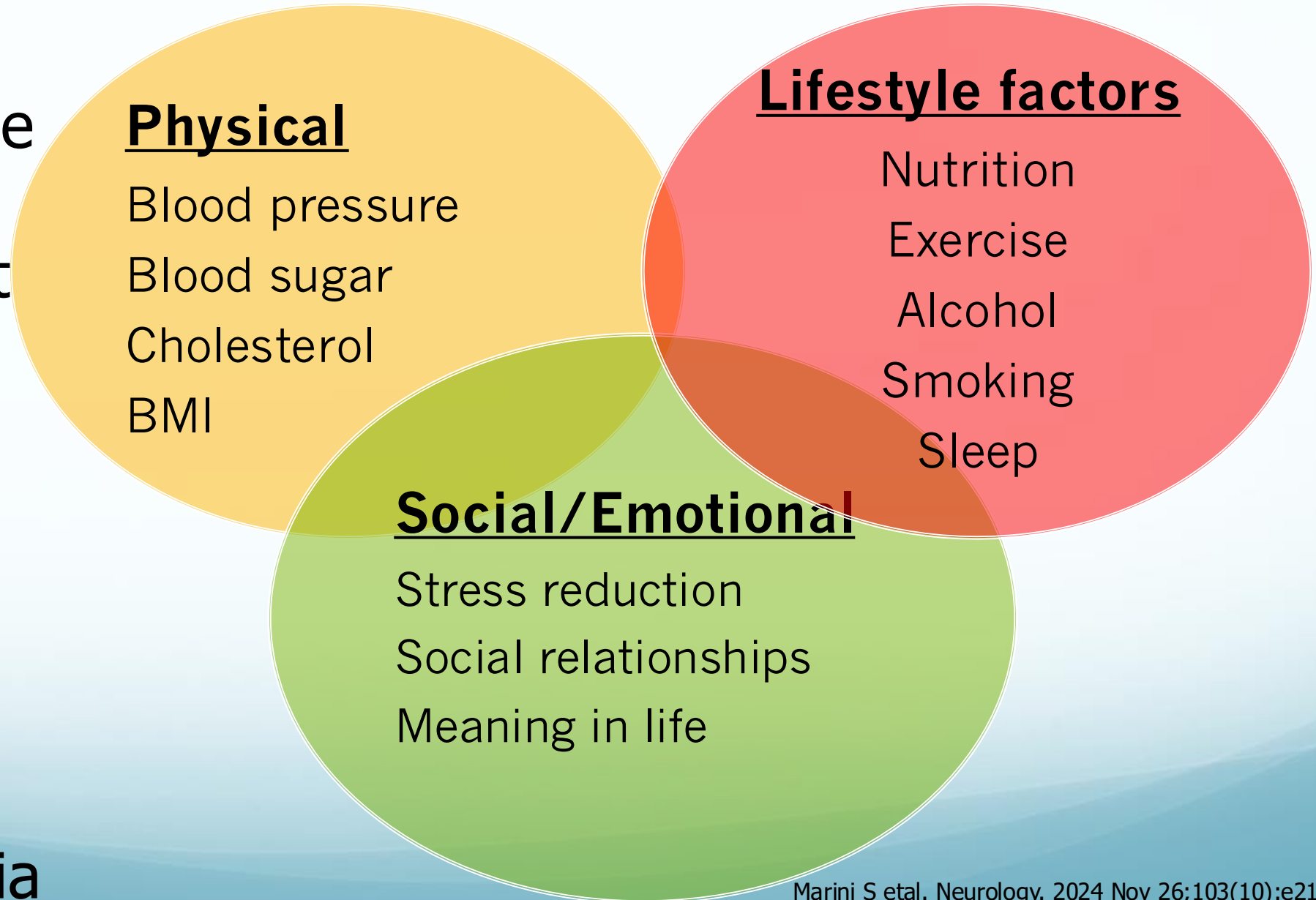
- What do we really need?
- Optimize what we have
 - Giving
 - Lower expectations
- The three questions

Longterm Effects of Living at Altitude

- Brain function affected by hypoxia (reduced oxygen) and low pressure
- Highlanders (people who have lived at high altitude for generations, e.g. Tibetans) have different gene expressions, physiologic structure and psychologic function than lowlanders
- High altitude defined as >2500m (8200 feet)
 - Aspen=7900 feet
- Longterm defined as >1 year
- Can result in reduced brain volume, synchronization and connectivity
 - associated with memory, attention and inhibitory control
- Interventions:
 - Hyperbaric Oxygen treatment: helps with altitude sickness, sleep, increase telomere length
 - Improved gut microbiome: probiotics, antimicrobials

McCance Brain Care Score (BCS)

- 21 point scale
- 5 point increase is achievable with significant effects
- 35% reduced risk of late life depression
- 30% reduced risk of stroke
- 18% reduced risk of dementia



Thank you

