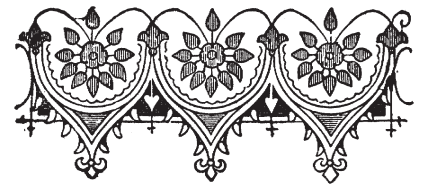


# Health & Wellness



## Brain Health: You CAN Lower Your Risk of Dementia



Dr. Kate Thomsen and Silky

Losing one's mind may be a person's subjective experience of early dementia. Abnormal brain changes triggering a decline in memory, language, problem-solving, and other thinking skills is not on anyone's bucket list. Fortunately it is not a "normal" part of aging despite the way it may seem. Alzheimer's disease, which accounts for 60 – 80% of all dementias, affects more than 6 million Americans today - that's 1 out of every 3 seniors! Deaths from Alzheimer's disease increased 145% between 2000 and 2019. Alzheimer's and dementia deaths have increased 16% during the COVID-19 pandemic.

There are many reasons why the number of people with dementia, particularly Alzheimer's dementia, keeps growing. Our frenzied lifestyle, poor lifestyle choices and environmental toxins are contributory. The process of altering the brain starts in middle age, and typically takes 20 – 30 years to produce the symptoms of dementia. That means that currently there are 50 million Americans with pre-symptomatic Alzheimer's! The science of epigenetics has shown us that our lifestyle can determine if our genetic risks are turned on or remain turned off. There are estimates that at least 1/3 of all dementias are preventable. So we all have some work to do....

In 2020 the Lancet Commission identified 12 modifiable risk factors for dementia prevention. These include: less education, high blood pressure, hearing impairment, smoking, obesity, depression, physical inactivity, diabetes, low social contact, excessive alcohol consumption, traumatic brain injury, and air pollution. Understanding that there is overlap among factors, other researchers point out that poor sleep, inadequate dietary choices, inflammation, stress, lower brain stimulation, vitamin and hormone deficiencies, and environmental or infectious neurotoxins should also be appreciated as modifiable risk factors for dementia. Let's dive in.

**Sleep:** 1) duration: A 2021 study in Nature Communications showed a 30% higher dementia risk when midlife sleep duration was 6 hours compared to a normal (7 hour) sleep duration. It is during sleep that the brain finds all the connections that were made in the day and strengthens them. This is called consolidation of memory. 2) darkness is also needed for optimal sleep. The internal brain clock sets our circadian rhythms preferring natural light in the day, and release of melatonin for sleep when it is dark. Our artificial lighting, especially the blue light of cell phones and e-readers, tells the brain that it is daytime and suppresses melatonin causing delayed sleep onset or interrupted sleep. 3) detox: During the night, while sleeping, the brain shrinks to 60% of its size. It squeezes out trash and toxins like a sponge as the spinal fluid comes up and washes them away. This glymphatic clearing removes 5 pounds of brain waste per year!!! Build-up of brain waste is another reason why inadequate sleep increases the risk of Alzheimer's Disease. For optimal sleep aim for: 7 hours uninterrupted; no screens (blue lights) for at least 1 hour prior to bedtime; 5 – 10 minutes of natural light in your eyes within 20 – 30 minutes of waking; Keep midday naps to 30 minutes or less; Long term use of sleep aides (including diphenhydramine) maybe counter-productive.

**Exercise:** Movement increases blood flow to the brain, improves sleep, and helps to balance the immune system. Long term studies have shown that walking 30 minutes daily can reduce the risk of cognitive decline by 30 – 60%. Walking has been shown to increase Brain Derived Neurotrophic Factor, a growth factor in the brain. A 2019 study from McMaster University showed that high intensity interval training (HIIT) three times per week over 12 weeks was associated with a 30% improvement in memory in 60 – 88 year olds. The 15 minute HIIT session included repeated cycles of high intensity walking for 4 minutes followed by a 1 – 2 minute break. Dancing may be the ultimate in exercise for those at risk for dementia because it includes both mental and physical exercise, social engagement and stress reduction.

**Exercise Your Brain:** Education early in life lowers the risk of dementia. Increasing education later in life can also lower the risk. Learning something outside your field of expertise may be more useful since it will exercise different types of brain cells. Pick things that

are both challenging and enjoyable like learning a second language, reading about a new subject, picking up a new musical instrument or a new sport, going to movies and discussing them, attending lectures, doing puzzles.... just change it up. Incorporating new skills like eating with chopsticks or writing with the nondominant hand a few times per week have been shown to "educate the brain" and increase memory scores.

**Hearing Loss:** Mild, Moderate and Severe hearing loss has been associated with 2 times the risk, 3 times the risk and 5 times the risk of dementia respectively. The use of hearing aides protects from the decline and this can be an important incentive for the many people who delay using them.

**Social Contact:** The Whitehall II Cohort study published in 2019 followed 35 to 55 year olds for 28 years. It showed that social contacts produced a protective effect against dementia. More frequent contact was associated with higher cognitive reserve. A different study reported that persons who saw friends almost daily at age 60 were 12% less likely to develop dementia than someone who only saw 1 – 2 friends every few months.

**Inflammation:** The brain's immune cells, the microglia, will attack healthy brain cells when there is infection, injury, toxins, and autoimmunity. Tick-borne diseases, bacterial infections, herpes and other viruses, and even oral infections like chronic gingivitis can cause brain inflammation. Toxins like heavy metals, alcohol, mycotoxins from mold and certain inhaled synthetic chemicals, (including cigarettes) can as well. Traumatic brain injury has been associated with a higher risk of dementia for up to 30 years afterward but the highest risk is in the year following the TBI and with severe or repeated injuries.

**Nutrition:** The MIND diet has been shown to lower Alzheimer's risk by 35% if followed moderately well and 53% if adhered to rigorously. This whole foods/no processed foods eating plan is high in protective nutrients and low in stabilizers, preservatives, additives, and salt. (See Side Bar) Flavinoid-rich foods in particular, (apples, pears, tea, strawberries, blueberries, red wine), have been shown to reduce the risk of Alzheimer's disease and related dementias.

**Smoking and Air pollution:** Smoking and second-hand smoke are both toxic to the brain. Carbon monoxide, nitrogen dioxide and particulate matter 2.5 (from wood

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**The MIND (Mediterranean diet + DASH diet) Lowers risk of Alzheimer's dementia**  
Whole foods, no processed foods, no packaged foods outside of the grocery store

It includes these:

Green Leafy Vegetables – every day	Whole grains – 3 x/day
Other vegetables – at least 1x/day	Fish – at least 1 x/week
Nuts – every day	Poultry – at least 2 x/week
Berries – at least 2 x/week	Olive Oil
Beans – every other day	Wine – 1 glass per day

**We Manage What We Measure**  
Measuring and monitoring these markers for risk can be incentives and goal posts for lowering risk for dementia and most other diseases:

- Blood tests: Inflammation (CRP), Cholesterol, Homocysteine, MPO, Autoantibodies, White blood cell counts, fasting glucose, fasting insulin, HgA1c
- Blood pressure
- Weight, BMI, Waist/Hip ratio
- Hearing test
- Sleep, Exercise – consider a tracker like a FitBit or an OURA ring
- Nutrition App – My Fitness Pal, Mt Plate Calorie Counter, Carb Manager, LoseIt!
- Air Pollution Meter – AirBeam2 and HabitatMap App
- Other resources: Brain IQ, Heart Math, tryhealthyminds.org

**What is My Risk of Developing Dementia?**  
Projectbiglife.ca (from Canada) – an online calculator that empowers individuals 55 and over to better understand the health of their brains and how they can reduce their risk of being diagnosed with dementia in the next five years.

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burning stoves and car exhaust) have all been associated with increased dementia risk.

**Hypertension:** Keeping systolic blood pressure (top number) at or below 130 from age 40 on (with or without medications) can lower dementia risk.

**Depression:** Episodes of depression have been associated with dementia in later life but studies differ on how treatment affects this risk.

**Obesity:** 19 longitudinal studies including almost 600,000 people aged 35 to 65 years, followed for up to 42 years, found that obesity (BMI ≥30) but not being overweight (BMI 25–30) was associated with late-life dementia.

**Diabetes:** Besides age, diabetes is the single greatest risk factor for Alzheimer's Disease. This condition alone increases risk by 65%.

**ApoE4:** A variation of the ApoE gene called E4 can increase one's risk of late-onset Alzheimer's disease. Having one copy of ApoE as E4 can increase one's risk by 2 – 3 times and 2 copies (E4/E4) can increase the risk by 12 times. While the genes cannot be changed, if an E4 risk is known, it becomes even more important to pay attention to the modifiable risks discussed above.

**Intervention Studies – You CAN Lower Your Risk of Dementia:**

The FINGER study from Finland showed that improving the health of the brain with the strat-

egies listed above can decrease the risk of Alzheimer's disease. The Chicago Health and Aging Project and the Rush Memory and Aging Project showed that the more lifestyle factors that are modified, the greater the risk can be decreased – up to about 60%. The U.S. POINTER study is the first large-scale, diverse, US based intervention study designed to see how much one can lower the risk of Alzheimer's disease. Initial results are expected in 2023.

"A mind is a terrible thing to waste." —Young & Rubicam Advertising. This iconic message is one of the most successful public service marketing slogans of all time. It was written for and adopted by the United Negro College Fund in 1972. It has a certain "stickiness" in our memories because of its broad interpretation. In 2013 the slogan was updated to this: "A mind is a terrible thing to waste, but a wonderful thing to invest in". Precisely.

Dr. Kate Thomsen's office for holistic health care is located in Pennington, NJ. She is trained in Family Medicine, and Board Certified in Integrative Medicine. She is an Institute for Functional Medicine Certified Practitioner. She has been practicing Functional Medicine for 23 years.

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