



# Alzheimer's Disease

A Guide to Brain Health

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ALLIANCE

# DISEASES AFFECTING THE BRAIN



Brain diseases affect 1 in 6 people globally.

Alzheimer's  
Disease

Dementia

Epilepsy

Parkinson's  
Disease

Movement  
Disorders

Sleep  
Disorders

Neurodegenerative diseases such as Alzheimer's disease result in the decline of the function and number of nerve cells in the nervous system.

In recent years, the term “Type 3 diabetes” has been used to refer to Alzheimer’s disease, since the neurodegenerative disease is linked to insulin resistance, which is the hallmark of Type 2 diabetes, in the brain.

# Alzheimers Disease

Alzheimer's disease is a progressive neurodegenerative disorder that is the most common cause of dementia. Here's a detailed overview of Alzheimer's disease and brain health:

## Causes of Alzheimer's Disease

- **Genetics:** Certain genes are associated with an increased risk of developing Alzheimer's, such as the APOE ε4 allele.
- **Age:** The risk increases with age, particularly after 65.
- **Family History:** A family history of Alzheimer's can increase one's risk.
- **Head Injuries:** Serious head injuries have been linked to future Alzheimer's risk.
- **Lifestyle Factors:** Cardiovascular health factors like hypertension, diabetes, and high cholesterol might contribute to Alzheimer's risk.
- **Linked to insulin resistance**, the term "**Type 3 diabetes**" has been used to refer to Alzheimer's disease.

## Symptoms

- **Memory Loss:** Difficulty remembering recent events or conversations.
- **Disorientation:** Getting lost in familiar places.
- **Difficulty with Routine Tasks:** Trouble managing finances or following recipes.
- **Language Problems:** Struggling to find the right words.
- **Personality Changes:** Becoming withdrawn, depressed, or anxious.



# Alzheimers Disease

The disease typically affects people over the age of 65, although it can also occur in younger individuals in less common early-onset forms.

## Progression

Alzheimer's disease typically progresses slowly in three general stages:

- Mild (early-stage)
- Moderate (middle-stage)
- Severe (late-stage)

## Diagnosis

- **Medical Evaluation:** Including medical history, mental status testing, and physical exams.
- **Neurological Exams:** Assessing brain function, reflexes, muscle tone, and movement.
- **Brain Imaging:** Using MRI or CT scans to rule out other causes of dementia.

## Treatment

- **Medications:** Drugs like cholinesterase inhibitors and memantine may help with symptoms but do not cure the disease.
- **Lifestyle Adjustments:** Managing heart health, staying mentally and physically active, and maintaining social connections.
- **Supportive Therapies:** Occupational therapy, modifying the living environment, and support for caregivers.



# SIX PILLARS OF BRAIN HEALTH



Exercise



Stress Reduction



Sleep and Relaxation



Socialization

Medications and Supplements



Food and Nutrition





# BRAIN-HEALTHY PLATE

## Healthy Fats

Plant oils (olive, walnut, avocado)  
Nuts and seeds (chia, flax, hemp, and sesame seeds, almonds, pistachios, and walnuts)



## Vegetables

Bell peppers, broccoli, brussel sprouts, cabbage, carrots, cauliflower, celery, cucumbers, eggplant, garlic, green beans, herbs, leafy greens (arugula, collard greens, kale, spinach, Swiss chard), onions, potatoes, squash (summer and winter)



## Fruits

Apples, avocado, bananas, berries (blackberries, blueberries, raspberries, strawberries), grapes, kiwi, lemons, limes, pineapple, oranges, stone fruit (apricots, cherries, mangoes, nectarines, peaches, plums)



## Water & Other Beverages

Water, black coffee, unsweetened black and green teas, red wine [limited]



## Whole Grains

Breads, barley, brown rice, buckwheat, bulgur, couscous, farro, freekeh, millet, oats, pasta, polenta, wheat berries, wild rice



## Protein

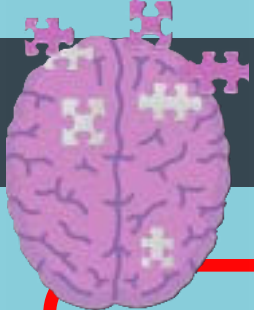
Beans (cannellini, garbanzo), beef, chicken, dairy foods, eggs, lamb, lentils, salmon, sardines, shellfish, soy (tofu, edamame), tuna



## Pantry Items

Chocolate, dried herbs, fortified plant milk, spices, sodium-free condiments and canned goods





# BRAIN-HEALTHY SUPPLEMENTS

## Vitamin D

Vitamin D receptors are present in the brain, suggesting it plays a role in brain health. Some studies have linked vitamin D deficiency to an increased risk of cognitive decline and dementia, including Alzheimer's disease.  
5,000-10,000 IU /day

## Melatonin

Cushions the brain from the effects of "stress" hormones – such as epinephrine, cortisol, and norepinephrine – which can impair memory. It also increases levels of a protein known as a brain-derived neurotrophic factor (BDNF), which increases the formation of neurons.



## Magnesium

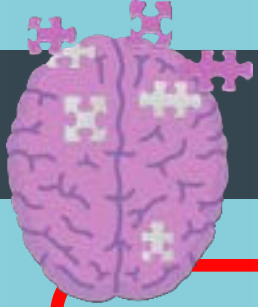
Magnesium taurate and magnesium L-threonate significantly increase magnesium levels in brain cells; hence they are used in the treatment of depression and Alzheimer's disease.

## Curcumin

Shown to accelerate adult hippocampus neurogenesis by augmenting the density of newly formed cells in the dentate gyrus areas of the brain. Curcumin's cognitive benefits may stem from its anti-inflammatory and/or anti-amyloid brain effects.

## Resveratrol

Resveratrol is an antioxidant found in the skin of purple and red fruits like grapes and berries, red wine, and peanuts. It may help protect the brain by preventing the deterioration of the hippocampus.  
500 mg/day



# BRAIN-HEALTHY SUPPLEMENTS

Dr. Kristina Carman also suggests these supplements:

- **Vitamin E:** a powerful antioxidant, protects against oxidative stress .
- **Omega 3s:** anti-inflammatory, antioxidant, brain protectant.
- **Lion's Mane Mushroom:** stimulates the production of NGF, a protein that plays a crucial role in the growth, maintenance, and survival of neurons and support of brain health.
- **Phosphatidylserine:** a compound found in the brain, known as a phospholipid. It may help protect brain cells and carry messages between them. Some studies suggest it can improve attention, language skills, and memory in aging individual.
- **B-vitamins:** essential for brain health, contribute to nerve signaling and brain function. They are particularly important in reducing homocysteine levels, high levels of which are linked to an increased risk of Alzheimer's and brain shrinkage.







# BRAIN-HEALTHY LIFESTYLE

## Healthy Lifestyle Choices

- Quit smoking
- Stop or reduce alcohol intake
- Regular exercise
- Check your hearing
- Prevent and manage high blood pressure
- Reduce/ maintain healthy weight to reduce risks of metabolic syndrome and insulin resistance



## Time Restricted Eating and Nutritious Diet

- One of the hallmarks of Alzheimer's disease is disruption to the body's circadian rhythm. Nearly 80% of people with Alzheimer's experience these issues, including difficulty sleeping and worsening cognitive function at night. In a recent study, mice that were fed on a time-restricted schedule showed improvements in memory and reduced accumulation of amyloid proteins in the brain.
- A diet rich in fruits, vegetables, whole grains, and lean proteins (like the Mediterranean diet) provides essential nutrients for brain health. Omega-3 fatty acids (found in fish) are particularly important for maintaining brain cell health. Antioxidants from fruits and vegetables combat oxidative stress, which can damage brain cells



# BRAIN-HEALTHY LIFESTYLE

## Regular Physical Exercise and Stress Management

- Exercise - particularly resistance training to prevents loss of muscle strength. Walking is a good form of exercise. A recent study found that as little as 3,800 steps a day reduced the risk of dementia by 25%.
- Increasing that amount and increasing the intensity of walking reduces the risk even further. A good case can be made that walking is the most effective exercise for health and longevity.
- Exercise increases blood flow to the brain, which can improve cognitive function. It also stimulates the production of neurotrophins, proteins that promote neuron growth and survival. Activities like aerobic exercise have been shown to reduce the risk of developing neurodegenerative diseases like Alzheimer's.
- Chronic stress can lead to shrinkage in a key memory area of the brain, hinder growth of nerve cells, and increase the risk of Alzheimer's disease.
- A daily meditation practice in the form of mindfulness, yoga, Tai-Chi, Qigong, and/ or breathing exercises has been proven to reduce stress and increase quality of life.





# BRAIN-HEALTHY LIFESTYLE

## Sleep

- Get 7-8 hours of restorative sleep every night.
- Pay attention to sleep hygiene - no TV, computer or routers in bedroom.
- Avoid bright white light before going to sleep. Consider having a lamp with red light in the bedroom.
- Growing evidence shows that getting quality sleep is correlated with improved brain health. The glymphatic system is the cerebral spinal fluid works with blood vessels and cells to “wash” your nervous system. This is active during the first half of the night, in slow wave sleep or deep sleep.
- Sleep is critical for brain health. It allows the brain to consolidate memories and remove toxins that accumulate during the day. Poor sleep is linked to a higher risk of cognitive decline and Alzheimer's disease.

## Sauna Therapy

- Regular sauna use has been linked to several health benefits, including a reduced risk of vascular diseases like high blood pressure, which is a risk factor for cognitive decline.
- The heat stress from a sauna may also stimulate the production of brain-derived neurotrophic factor (BDNF), which supports brain cell growth and repair.





# BRAIN-HEALTHY LIFESTYLE

## Social Interactions and Mental Stimulation

- Regular social interaction helps to prevent depression and stress, both of which can contribute to memory loss. Social activities can also stimulate the brain through conversation and emotional connections.
- Engaging in mentally stimulating activities (like puzzles, reading, or learning new skills) helps to build cognitive reserve. This can keep the brain active and may delay the onset of cognitive decline.





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